1985
MINNESOTA
MOTOR VEHICLE

Crash Facts

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MOTOR VEHICLE CRASH FACTS

1985

An analysis of crashes occurring on Minnesota roadways based upon accident reports submitted by investigating police officers and drivers to the Minnesota Department of Public Safety

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DEFINITIONS

Motor Vehicle Accident/Crash - An accident that involves a motor vehicle in transport on a traffic-way in Minnesota and results in injury, death, or at least $500.00 in property damage.

Fatal Accident/Crash - A motor vehicle crash on a public traffic-way in which at least one person dies unintentionally as a result of the crash. The death must occur within 30 days of the accident.

Severe or Incapacitating Injury - An injury (other than a fatal injury) that prevents the injured person from walking, driving or normally continuing the activities he or she was capable of performing before the injury occurred. Includes severe lacerations, broken or distorted limbs, skull fracture, crushed chest, internal injuries, unconsciousness, etc. Hospitalization is usually required.

Moderate or Non-Incapacitating injury - An injury (other than a fatal or severe injury) that is evident to the officer at the scene of the accident. Includes abrasions, minor lacerations, bleeding, etc. May require medical treatment, but hospitalization is usually not required.

Minor or Possible Injury - An injury (other than a fatal, severe, or moderate injury) that is reported by a person involved in the accident. Includes complaint of physical pain when no cause is evident, momentary unconsciousness, limping, nausea, hysteria, etc.

Introduction and Summary

The 1985 edition of Minnesota Motor Vehicle Crash Facts has been produced by the Office of Traffic Safety, Minnesota Department of Public Safety, in accordance with Minnesota Statutes, Section 169.10. The information presented is derived from accident reports submitted by citizens and law enforcement agencies for motor vehicle crashes involving death, personal injury, or property damage of $500 or more. The minimum dollar amount for accidents involving only property damage has changed over the years. The first minimum was set at $50 in 1939. This remained in effect until 1965 when $100 became the minimum. In 1976, it was raised to $300 and the present minimum ($500) became effective in 1981.

In 1985, 610 people were killed and 45,205 were injured in 107,675 crashes throughout the state. Over 3.2 million vehicles traveled 33.1 billion miles on our state's roadways. And Minnesota driver licenses were held by 3,039,318 persons in 1985.

The total economic loss resulting from motor vehicle accidents in Minnesota was over $480,000,000. This figure is calculated from costs estimated for 1984 by the National Safety Council for fatalities, injuries, and property loss resulting from traffic crashes.

The total dollar value is determined as follows:

610	Deaths	@	$220,000 =	$134,200,000
6,454	Severe Injuries	@	21,600 =	139,406,400
17,670	Moderate Injuries	@	5,200 =	91,884,000
21,081	Possible Injuries	@	1,200 =	25,297,200
75,736	Property Damage Accidents	@	1,190 =	90,125,840
			Total =	$480,913,440

These estimates are based on the calculable costs of wage loss, medical expenses, insurance costs, and property damage.

THE FOLLOWING SUMMARIZES SEVERAL CATEGORIES OF 1985 TRAFFIC CRASHES:

GENERAL INFORMATION:

The fatality rate per hundred million vehicle miles traveled increased slightly from 1.81 in 1984 to 1.84 in 1985. However, it was still well below the previous five-year average of 2.26, and the preliminary national figure of 2.60 for 1985.

Total crashes increased by six percent over 1984, however, the crash rate per hundred million vehicle miles traveled decreased by five percent from 1984, and by three percent from the five-year period 1980-1984.

ALCOHOL:
Only 47 percent of drivers killed had alcohol in their blood. This is the lowest percentage ever recorded in Minnesota, and a significant decrease from the 58 percent positive cases in 1984 and from the previous five-year average of 60 percent.

SEAT BELTS:
In cases where restraint use was known, eleven percent of the people killed and 19 percent of those injured were wearing seat belts. In 1984, the figures were 9 percent and 16 percent, respectively. The 1985 Minnesota Safety Restraint Observation Study showed that 18.5 percent of all people observed at various sites throughout the state were wearing safety restraints. This is the highest figure recorded for any of the five years in which the study was conducted.

BICYCLES:
Ten bicyclist fatalities were recorded in 1985, tying 1981 for the all-time low, and representing a 33 percent decline from 1984 and a 29 percent decrease from the previous five-year average. Persons most involved in bicycle accidents were 10 to 14 year-old males.

TRUCKS:
Truck crashes made up eight percent of the total crashes in Minnesota, 17 percent of the fatalities, and six percent of the injuries. A new section on truck crashes was added to Crash Facts this year in response to growing concern nationally and locally about large truck involvement in severe traffic crashes.

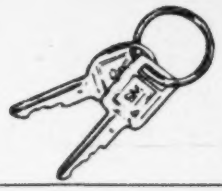
PEDESTRIANS:
Twenty-five percent of the 1985 pedestrian fatalities were persons 75 years and older; and thirty percent of all fatal crashes occurred in cities under 1,000 people. The 65 fatalities in 1985 represent a 15 percent increase over 1984, but a 20 percent decrease from the previous five-year average. The percent of pedestrian fatalities who had been drinking dropped significantly from 53 percent in 1984 to 41 percent in 1985.

MOTORCYCLES:
The 77 motorcycle fatalities represent a 24 percent increase over 1984 but a nine percent decrease from the previous five-year average. Forty-seven percent of the motorcycle drivers in fatal crashes had been drinking, according to police reports. Seventy-nine percent of the motorcyclists killed were not wearing helmets at the time of the accident, compared to 51 percent in 1984.

The purpose of Minnesota Motor Vehicle Crash Facts is to provide summary information about the traffic crashes which occur in Minnesota. The report is divided into nine parts. The first examines general information about crashes, vehicles, and drivers; the other sections review pedestrians, motorcycles, and other selected types of motor vehicle crashes.

Due to changes in the way accident information is collected and analyzed, some of the results presented here may differ slightly from figures that will be available at a later date.

Part I



General Information

Traffic crashes have commonly been seen as an expected part of modern society. Ongoing traffic safety programs and increased public awareness seem to be changing this view. In addition to continuing engineering, education, and enforcement programs, efforts to reduce fatalities and injuries on Minnesota's highways have recently been concentrated in areas such as drunk driving, seat belt use and the 55-mile-per-hour speed limit.

In the past ten years, traffic accident statistics in Minnesota have shown marked improvement. Fatalities have dropped from a high of 980 in 1978 to a low of 558 in 1983, a 44 percent reduction. Total injuries and crashes have also decreased, although not by such a large margin. These changes have occurred despite an increase in vehicular miles traveled and licensed drivers. Fatalities increased by four and one-half percent each of the past two years. However, this occurred after five consecutive years of fatality reductions. The 610 fatalities in 1985 compares to 584 in 1984 and is nine percent lower than the average of the previous five years. The number of crashes and injuries also increased over 1984 by six percent each.

To put 1985 figures in perspective, other factors must be considered. For example, in 1985 the number of registered vehicles increased four percent, and the number of vehicular miles traveled increased by three percent. Therefore, although the number of crashes increased in 1985, the crash rate per hundred million vehicle miles traveled decreased from 1984 (and from the previous five-year average). The indicator most often used in assessing a state's progress in traffic safety is the fatality rate per hundred million vehicle miles traveled. In 1985, preliminary figures show a fatality rate of 1.84, one of our lowest on record. This means that fewer than two people were killed in traffic crashes for every 100,000,000 miles traveled in the state. This rate compares with the preliminary national fatality rate of 2.6 and Minnesota's 1984 rate of 1.81.

For a better overall understanding of Minnesota's 1985 traffic accidents as a whole, a breakdown by "who, what, where and when" describing basic environmental and circumstantial factors follows:

WHO was involved.....

By far the greatest percent of persons killed or injured in motor vehicle crashes were the drivers. Fifty-two percent of all injuries and fatalities were drivers of cars or trucks, and 29 percent were passengers. Other categories next in order of involvement were motorcycle drivers, pedestrians, bicycle drivers, and motorcycle passengers.

* Sixty-six percent of all persons killed were male. Of car or truck drivers, 70 percent were male, and, of motorcycle drivers, 97 percent were male. Males and females were about evenly represented in passenger fatalities.

* Of males killed or injured, the largest age group was 20 to 24 years of age; however, 15-to-19-year-olds constituted the largest group of females. The largest age group for males and females combined was 15-to-19-year-olds, (18 percent), with 20-to-24-year-olds close behind (17.5 percent).

* Three hundred sixty-two people were killed while occupying a passenger car--59 percent of total fatalities. The second most common vehicle type for fatalities and severe injuries was a motorcycle, with 77 fatalities (13 percent).

* In 1985, 199,086 drivers were involved in traffic crashes; this translates into one out of every 15 licensed drivers. Sixteen-to-twenty-year-olds made up the largest category of drivers in all crashes, and 21-to-25-year-olds the largest category in fatal crashes. Although 16-to-20-year-olds made up less than ten percent of all licensed drivers in 1985, they were involved in 16 percent of both total crashes and fatal crashes. Just under 13 percent of licensed drivers were 21-to-25 years old, yet these drivers were involved in 17.5 percent of fatal crashes and 15.3 percent of total crashes. These are the only two age groups which were overrepresented in crashes.

* Younger drivers 16-to-20 were about twice as likely to be involved in single-vehicle crashes as those over 35, especially in collisions with fixed objects and in overturns.

* Illegal or unsafe speed and driver inexperience were more likely to be contributing factors for young drivers in crashes than for older drivers, while older drivers were more likely to fail to yield right of way, disregard traffic control devices, be inattentive, or make improper lane changes, turns, stops, or starts.

WHAT the conditions were....

Most collisions occurring in 1985 were between two moving motor vehicles (63 percent); a collision with a parked motor vehicle was second with 13 percent; and third was a collision with a fixed object (12 percent). Fatality rates per thousand crashes show that a crash between a motor vehicle and a railroad train has the highest probability of fatality--9.7 fatalities per 100 crashes. In hit-and-run crashes, a collision with a parked motor vehicle was the most common type of crash.

* Although one might expect serious accidents to occur most often during inclement weather, the majority of accidents occurred on dry pavement, and half under a clear sky. Seventy-two percent of all fatal collisions and fifty-three percent of all collisions occurred on dry roadways in 1985, and half occurred in clear weather.

* More than one contributing factor may be indicated by the police officer investigating a crash. Those most frequently cited in 1985 were illegal or unsafe speed, driver inattention and physical impairment (drinking while driving, illness, etc....). For personal injury and property damage crashes, driver inattention and failure to yield right of way outnumbered other factors cited.

WHERE they happened....

* Almost twice as many total crashes and injury crashes occurred in urban areas as in rural areas; however, the latter had the greater share of fatal crashes. This can be attributed to higher speeds on rural roadways and therefore increased severity when crashes did occur. Fatal crashes were most likely to occur on two lane undivided two-way roads. Thirty-eight percent of all crashes occurred on this type of road design.

* The largest percentage of fatal crashes occurred on trunk highways (46 percent), followed by county state aid highways (32 percent). Trunk highways also had the greatest percent of total crashes (30 percent), and local streets were the site of 29 percent of all crashes.

* Most crashes in 1985 occurred at sites where there was no traffic control device. However, where such a device was present, it was most often marked a stop sign (three and one-half times more often than a traffic signal).

* Six counties had at least five more fatalities than their previous five year averages. However, the following nine counties had at least five fewer traffic fatalities than their previous five-year averages: Anoka, Blue Earth, Carlton, Clay, Douglas, Hennepin, Ottertail, Renville, and Winona. Counties with no fatalities in 1985 were: Kanabec, Lincoln, Pennington, Red Lake, Stevens, Traverse, and Wilkin.

WHEN they happened....

The winter months are generally the worst months for traffic crashes in Minnesota, and 1985 was no exception:

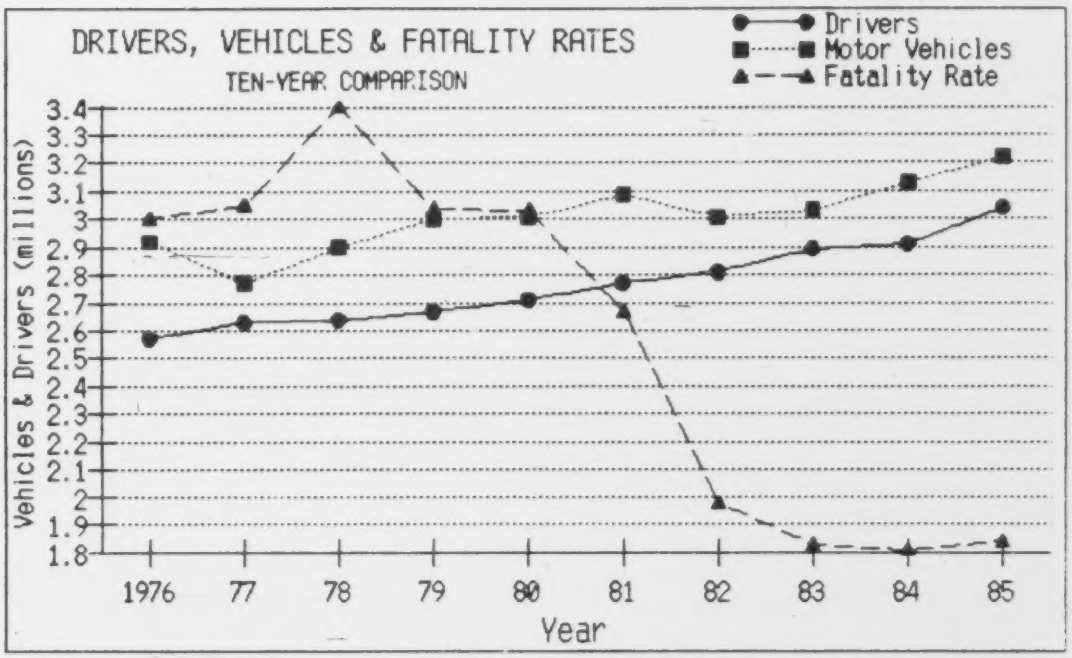
* Thirty-two percent of the year's crashes occurred during November, December, and January. December had 12,556 crashes, making it the worst month. Fatal crashes, however, are more apt to occur in the summer months. In 1985, August had the most fatal crashes--64--but November had the greatest number of fatalities--76 in 60 crashes. In general, though, summer fatalities are more frequent than winter fatalities. 1985 averaged 36 deaths per month in winter and 66 per month in summer.

* Of all crashes, the greatest number occurred during the hour between 3:00 p.m. and 4:00 p.m. On Saturdays and Sundays, the worst hour was between 1:00 a.m. and 2:00 a.m. Of fatal crashes, 4:00 p.m. to 5:00 p.m. was the most dangerous hour with 36 crashes. Again, the exceptions were Saturday and Sunday, when more fatal crashes occurred between 1:00 a.m. and 2:00 a.m. than any other hour. Friday was the worst day for total crashes with 19,022 crashes. Fatal crashes were highest on Saturdays, with 96 occurring on that day.

* The only fatality-free holiday period in 1985 was Christmas. During this 30-hour period, 45 personal injury crashes, and 133 property damage crashes occurred--both of which were the lowest during any holiday period last year. The largest increase in holiday accidents over the past six years was seen during the Thanksgiving holiday, with 2,054 crashes in 1985. A steady rise in accidents during this holiday period resulted in a 48 percent increase over the previous five-year average. The

largest decrease in accidents per holiday hour occurred during the July Fourth holiday, when only 12 accidents per hour occurred in 1985 after a previous five-year average of 22 accidents per hour. (A "per-hour" figure is used for comparison during some holidays because of differences in the number of hours in a holiday period from year to year).

FIGURE 1.01



Fatality Rate - Fatalities per hundred million vehicle miles traveled.

TABLE 1.01

CRASH, FATALITY AND INJURY RATES, 1976-1985

	1976	1977	1978	1979	1980	1981	1982	1983	1984	1985
Traffic Crashes	116,390	119,754	118,833	120,633	103,612	97,879	89,443	97,371	101,554	107,675
Traffic Fatalities	809	856	980	881	863	763	581	558	584	610
Traffic Injuries	41,580	45,200	50,332	49,604	45,227	43,739	38,692	41,086	42,654	45,205
Registered Motor Vehicles (Millions of Vehicles)	2.92	2.77	2.90	3.00	3.01	3.09	3.01	3.03	3.13	3.22
Licensed Drivers (Millions of Drivers)	2.57	2.63	2.64	2.67	2.71	2.77	2.81	2.89	2.91	3.04
Vehicular Miles Traveled (Billions of Miles)	27.0	28.1	28.8	29.0	28.5	28.6	29.4	30.5	32.2	33.1
Fatality Rate Per Hundred Million Vehicle Miles Traveled	3.00	3.05	3.40	3.04	3.03	2.67	1.98	1.83	1.81	1.84
Fatality Rate Per 100,000 Registered Vehicles	27.7	30.9	33.8	29.3	28.7	24.7	19.3	18.4	18.7	18.9
Fatality Rate Per 100,000 Population	20.4	21.6	24.5	21.7	21.2	18.6	14.2	13.5	14.1	14.7
Crash Rate Per Hundred Million Vehicle Miles Traveled	432	426	412	417	364	342	313	319	342	325
Crash Rate Per 100,000 Registered Vehicles	3,980	4,323	4,100	4,018	3,446	3,163	2,972	3,214	3,244	3,330
Crash Rate Per 100,000 Population	2,936	3,032	2,965	2,971	2,546	2,387	2,181	2,356	2,450	2,584

TABLE 1.02

TRAFFIC CRASH TRENDS
1980 - 1985

	1980	1981	1982	1983	1984	1980-1984 Average	1985	Record High
Total Crashes	103,612	97,897	89,443	97,371	101,554	97,972	107,675	123,106 (1975)
Injuries	45,227	43,739	38,692	41,086	42,654	42,280	45,205	50,332 (1978)
Total Fatalities	863	763	581	558	584	670	610	1,060 (1968)
Pedestrian	114	100	76	62	55	81	65	157 (1971)
Mv/Train	15	15	7	15	11	13	13	92 (1932)
Bicycle	19	9	12	14	15	14	10	24 (1977)
Motorcycle	121	85	70	66	62	81	77	121 (1980)
3-Wheel Vehicle	N.A.	N.A.	2	9	4		1	9 (1983)
Snowmobile	5	3	1	4	9	4	3	N.A.
Motor Vehicle Occupants	576	558	415	398	430	475	441	N.A.
Fatality Rate*	3.03	2.67	1.98	1.83	1.81	2.26	1.84	13.6 (1934)
U.S. Fatality Rate	3.48	3.29	2.89	2.70	2.68	3.01	2.6**	18.0 (1925)
Economic Loss (millions)	$395.0	$398.0	$366.4	$393.3	$443.9	$399.3	$480.9	$480.9

* Rate is based upon per 100 million vehicle miles of travel.

** Preliminary

TABLE 1.03

1985 FATALITIES BY TRAFFIC ROLE AND AGE

Traffic Role	0-9	10-19	20-29	30-39	40-49	50-59	& Older	Unknown	Total
Car/Truck Driver		45	83	42	35	29	66	1	301
Car/Truck Passenger	10	39	21	9	10	7	37	7	140
Pedestrian	9	10	9	6	3	4	23	1	65
Bicyclist	2	2	4	1			1		10
Motorcycle Driver/ Passenger		16	48	11	1	1			77
All-Terrain Vehicle Driver/Passenger					1				1
Snowmobile Driver/Passenger		2	1						3
Other/Unknown	2	5	2	3		1			13
Total	23	119	168	72	50	42	127	9	610

TABLE 1.04

1985 FATALITIES BY TRAFFIC ROLE AND SEX

Traffic Role	Male	Female	Total
Car/Truck Driver	212 (70.4%)	89 (29.6%)	301
Car/Truck Passenger	64 (45.7%)	76 (54.3%)	140
Motorcycle Driver	61 (96.8%)	2 (3.2%)	63
Motorcycle Passenger	7 (50.0%)	7 (50.0%)	14
Pedestrian	37 (56.9%)	28 (43.1%)	65
Bicyclist	9 (90.0%)	1 (10.0%)	10
Moped Passenger	1 (100.0%)	0	1
All-Terrain Vehicle Driver	1 (100.0%)	0	1
Other Driver	4 (100.0%)	0	4
Other Passenger	1 (50.0%)	1 (50.0%)	2
Other	5 (83.3%)	1 (16.7%)	6
Unknown	2 (66.7%)	1 (33.3%)	3
Total	404 (66.2%)	206 (33.8%)	610

FIGURE 1.02

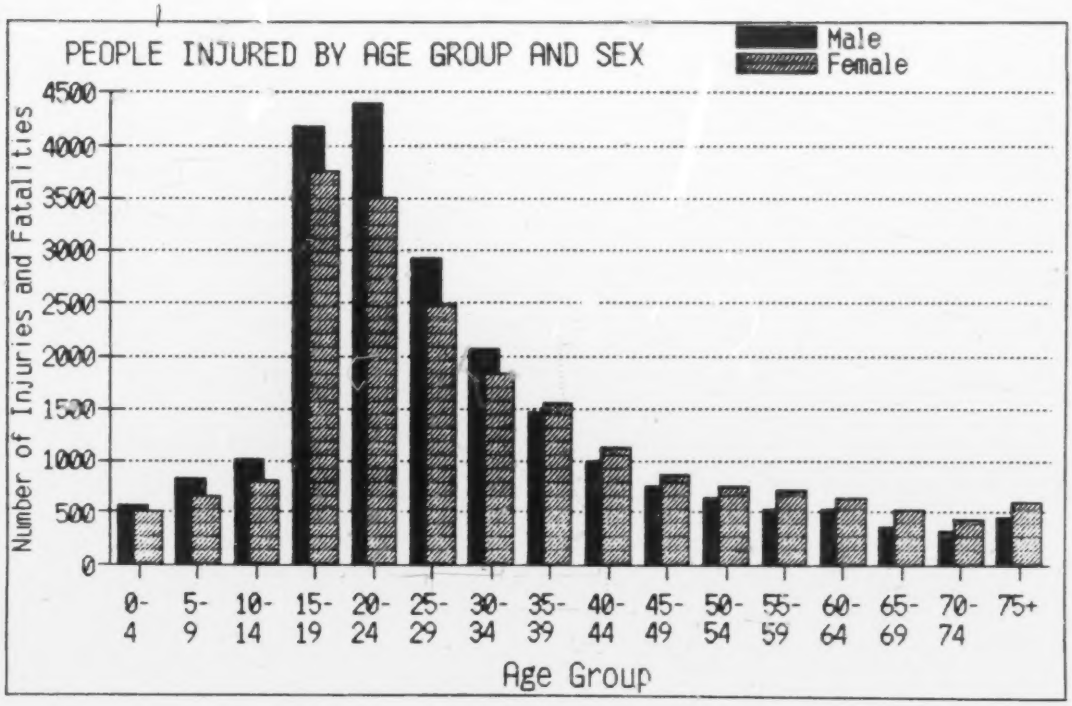


TABLE 1.05

AGE AND SEX OF PERSONS KILLED AND INJURED IN 1985 CRASHES

Age Group	Killed			Injured		
	Male	Female	Total	Male	Female	Total
0- 4	6	7	13	581	517	1,099
5- 9	5	5	10	843	657	1,500
10-14	10	6	16	1,006	823	1,830
15-19	66	36	102	4,180	3,761	7,941
20-24	79	16	95	4,394	3,505	7,905
25-29	59	15	74	2,922	2,490	5,414
30-34	33	7	40	2,054	1,836	3,890
35-39	18	14	32	1,465	1,546	3,011
40-44	15	9	24	995	1,123	2,118
45-49	18	8	26	756	862	1,619
50-54	13	11	24	636	757	1,393
55-59	12	7	19	550	716	1,267
60-64	17	7	24	540	645	1,185
65-69	12	9	21	362	528	890
70-74	5	15	20	326	450	776
75 & Over	31	32	63	466	611	1,077
Not Stated	3	4	7	954	1,299	2,290
Total	402	208	610	23,030	22,126	45,205

TABLE 1.06

PEOPLE KILLED AND INJURED IN VARIOUS VEHICLE TYPES

Vehicle Type	Fatalities	Severe Injuries	Moderate Injuries	Possible Injuries	Total
Passenger Car	362	3,866	12,507	16,624	33,359
Passenger Car & Trailer	0	12	26	24	62
Truck or Truck Tractor	5	69	228	245	547
Truck Tractor and Semi-Trailer	7	40	104	128	279
Truck With Other Trailer	2	4	14	16	36
Pickup Truck	51	466	1,403	1,595	3,515
Van	15	112	359	409	895
Motorcycle	77	821	1,212	467	2,577
Motorscooter/Motorbike	4	21	35	10	70
Moped	0	26	45	14	85
All Terrain Vehicle	1	59	31	11	102
School Bus	1	1	37	139	178
Bus	0	7	30	84	121
Motorhome/Camper	1	5	14	21	41
Snowmobile	3	21	21	18	63
Farm Equipment	2	9	10	13	34
Taxicab	1	12	18	37	68
Police Vehicle	0	5	28	64	97
Fire Department Vehicle	1	0	2	4	7
Ambulance	0	2	2	6	10
Military Vehicle	0	0	1	4	5
Road Maintenance Vehicle	0	2	7	6	15
Bicyclist	10	260	706	376	1,352
Pedestrians	65	607	673	557	1,902
Other/Unknown	2	27	155	211	395
Total	610	6,454	17,668	21,081	45,815

TABLE 1.07

DRIVER LICENSE* SUMMARY BY AGE, 1976-1985

	1976	1977	1978	1979	1980	1981	1982	1983	1984	1985
15-19	307,481	315,138	304,021	290,570	281,750	269,577	257,151	248,761	236,824	238,659
20-24	373,524	381,161	381,377	385,831	391,310	395,496	392,548	388,573	376,051	370,613
25-29	341,678	347,358	343,112	350,879	360,167	369,236	376,034	381,076	384,544	405,120
30-34	263,080	278,622	285,395	299,790	317,137	329,488	336,185	343,874	350,728	370,634
35-39	209,903	221,252	229,247	235,994	240,789	257,450	270,169	281,484	295,902	322,827
40-44	181,150	183,921	186,793	190,213	196,020	204,317	215,529	224,477	231,740	241,313
45-49	180,661	178,614	173,818	173,194	172,813	175,196	177,343	182,122	185,534	195,594
50-54	178,916	179,266	176,922	174,754	173,760	173,361	171,348	168,949	168,248	170,984
55-59	155,747	166,771	165,288	167,712	168,986	169,120	169,761	169,520	167,629	169,847
60-64	145,464	146,736	147,428	147,381	148,512	152,104	154,268	154,937	157,311	161,519
65-69	115,327	117,955	118,899	121,295	124,469	128,310	130,611	133,450	133,503	139,155
70-74	85,428	86,494	87,833	90,064	92,061	95,385	99,435	101,548	103,525	112,352
75 & Older	94,665	93,383	96,487	97,741	98,499	106,857	115,664	118,371	119,266	140,701
Total	2,633,024	2,696,671	2,696,620	2,725,418	2,766,273	2,825,897	2,866,046	2,897,142	2,910,805	3,039,318

* Includes Learner's Permits

TABLE 1.08

AGE AND SEX OF DRIVERS IN 1985 CRASHES*

	Fatal Crashes				All Crashes			
Age Group	Male	Female	Not Stated	Total	Male	Female	Not Stated	Total
15 & Under	6	1	0	7	424	208	2	634
16 - 20	117	24	0	141	20,870	11,426	17	32,313
21 - 25	127	26	0	153	19,647	10,790	28	30,465
26 - 30	89	21	0	110	14,775	8,065	22	22,862
31 - 35	73	18	0	91	11,278	6,598	14	17,890
36 - 40	41	10	0	51	8,373	5,167	11	13,551
41 - 45	43	9	0	52	6,108	3,594	9	9,711
46 - 50	30	12	0	42	4,727	2,576	2	7,305
51 - 55	33	7	0	40	4,089	2,179	3	6,271
56 - 60	28	8	0	36	3,861	1,903	1	5,765
61 - 65	26	7	0	33	3,087	1,550	5	4,642
66 - 70	23	4	0	27	2,298	1,251	4	3,553
71 & Over	31	20	0	51	4,377	2,301	27	6,705
Not Stated	17	6	20	43	10,273	4,789	22,357	37,419
Total	684	173	20	877	114,187	62,397	22,502	199,086

* Most crashes involve more than one driver. For that reason, the total number of drivers involved in fatal crashes and listed here will be greater than the total number of fatal crashes (which was 538 in 1985). Pedestrians and bicyclists are not included.

TABLE 1.09

PERCENT OF DRIVERS IN AN AGE GROUP BY ACCIDENT TYPE - 1985

Accident Type	Drivers 16-20 (%)	Drivers 21-25 (%)	Drivers 26-30 (%)	Drivers 31-35 (%)	Drivers 36-65 (%)	Drivers 66 & Above (%)
Collision With:						
Other Motor Vehicle	75.3	78.3	80.8	82.3	83.9	85.5
Parked Motor Vehicle	5.7	4.6	4.0	3.7	3.4	5.5
Railroad Train	0.1	0.0	0.1	0.1	0.1	0.1
Bicyclist	0.6	0.6	0.6	0.8	0.8	0.9
Pedestrian	0.9	0.9	0.9	0.9	0.9	1.2
Animal	1.4	1.8	2.3	2.4	2.8	1.2
Fixed Object	10.7	9.3	7.6	6.6	5.4	4.3
Other Object	0.3	0.4	0.4	0.3	0.3	0.2
Non-Collision:						
Overturn	4.2	3.3	2.6	2.2	1.6	0.7
Fire/Explosion	0.1	0.1	0.0	0.1	0.1	0.0
Submersion	0.0	0.0	0.0	0.0	0.0	0.0
Other	0.7	0.7	0.6	0.6	0.6	0.4
Total	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%

The percentages are based on the number of accident-involved drivers in each age group. Bicyclists and pedestrians are not included.

TABLE 1.10

LICENSED* VS. CRASH-INVOLVED DRIVERS BY AGE - 1985

Age Group	Percent of All Licensed Drivers	Percent of Drivers Involved In Fatal Crashes	Percent of Drivers in Injury Crashes	Percent of Drivers in Property Damage Crashes	Percent of Drivers in All Crashes
15 & Under	0.4	0.8	0.5	0.2	0.3
16 - 20	9.6	16.1	18.7	15.3	16.2
21 - 25	12.8	17.5	17.4	14.5	15.3
26 - 30	13.1	12.5	12.7	11.0	11.5
31 - 35	11.9	10.4	10.0	8.6	9.0
36 - 40	10.0	5.8	7.6	6.5	6.8
41 - 45	7.8	5.9	5.3	4.7	4.9
46 - 50	6.2	4.8	3.9	3.6	3.7
51 - 55	5.6	4.6	3.6	3.0	3.1
56 - 60	5.6	4.1	3.2	2.8	2.9
61 - 65	5.2	3.8	2.6	2.2	2.3
66 - 70	4.4	3.1	2.0	1.7	1.8
71 & Over	7.4	5.8	3.6	3.3	3.4
Not Stated	0.0	4.9	8.9	22.8	18.8
	100%	100%	100%	100%	100%

* Includes drivers with instruction permits.

FIGURE 1.03

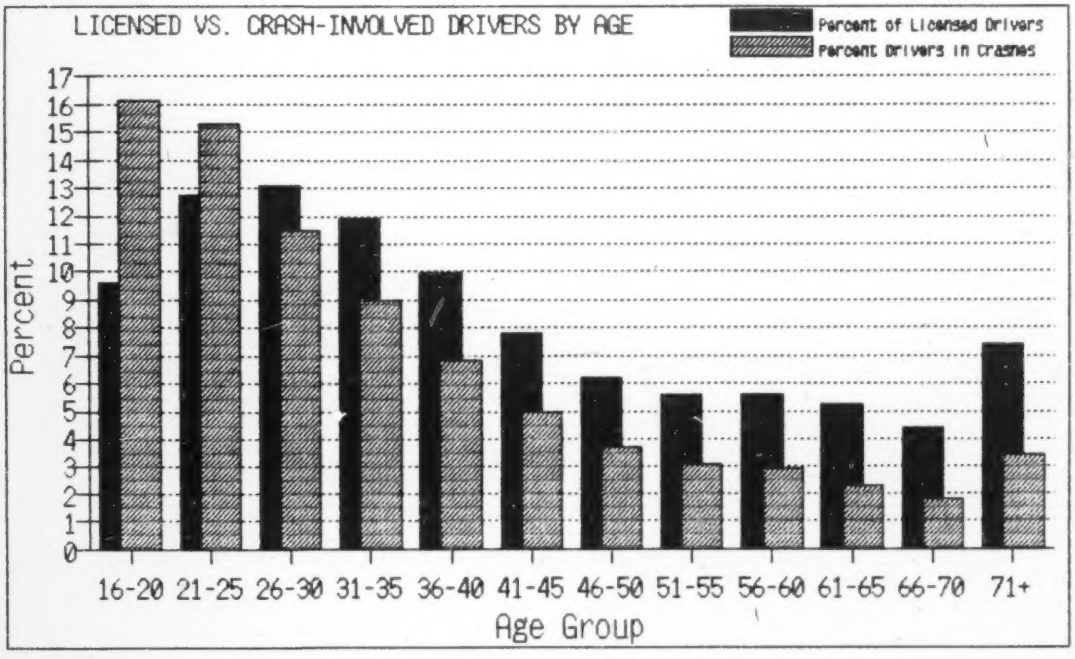


TABLE 1.11

PERCENT OF DRIVERS IN AN AGE GROUP BY CONTRIBUTING FACTORS CITED - 1985

Contributing Factor	Drivers 16-20 (%)	Drivers 21-25 (%)	Drivers 26-30 (%)	Drivers 31-35 (%)	Drivers 36-65 (%)	Drivers 66 & Above (%)
Failure to Yield Right of Way	13.1	12.7	12.9	14.3	17.6	29.4
Illegal/Unsafe Speed	15.6	15.6	14.4	12.9	9.4	4.4
Following Too Closely	5.1	5.7	5.7	5.6	4.	2.9
Disregard for Traffic Control Device	3.2	3.8	3.5	3.5	3.7	5.1
Driving Left of Center-- Not Passing	1.8	1.7	1.6	1.5	1.4	1.3
Improper Passing/ Overtaking	1.5	1.8	1.8	1.7	1.6	1.1
Improper/Unsafe Lane Use	3.6	4.4	4.2	4.0	4.6	5.1
Improper Parking/ Starting/Stopping	1.1	1.3	1.2	1.7	1.7	2.4
Improper Turn	2.4	2.4	2.8	2.7	3.3	4.7
Unsafe Backing	1.7	1.8	1.6	2.0	2.3	2.8
No/Improper Signal	0.3	0.5	0.4	0.6	0.[illegible]	0.8
Impeding Traffic	0.3	0.3	0.3	0.3	0.5	0.2
Driver Inattention/ Distraction	23.1	24.2	24.4	25.3	25.7	25.7
Driver Inexperience	10.1	3.0	2.2	1.7	1.4	0.9
Physical Impairment	4.8	7.6	7.3	6.1	4.8	3.2
Vision Obscured	3.1	3.2	3.8	4.1	4.8	3.7
Defective Equipment	1.3	1.3	1.3	1.2	1.2	0.5
Other	7.9	8.7	10.6	10.8	10.6	5.8
Total	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%

Percentages are based on all contributing factors cited within each age group. Bicyclists and pedestrians are excluded.

TABLE 1.12

1985 CRASHES AND INJURIES BY ACCIDENT TYPE*

Type of Crash	Fatal Crashes	Number Killed	Fatality Rate Per 1,000 Crashes	Injury Crashes	Number Injured	Property Damage Crashes	Total Crashes
Collision With:							
Other Motor Vehicle	272	320	4.7	19,575	30,614	48,486	68,333
Parked Motor Vehicle	3	4	29.6	1,029	1,292	12,483	13,515
Railroad Train	8	13	97.0	63	87	63	134
Bicyclist	10	10	7.3	1,325	1,382	33	1,368
Pedestrian	63	63	36.2	1,669	1,782	8	1,740
Animal	2	2	0.6	265	331	3,238	3,505
Fixed Object	100	112	8.5	4,353	5,565	8,677	13,130
Other Object	0	0	0	132	156	335	467
Non-Collision:							
Overturn	67	70	16.0	2,477	3,382	1,766	4,309
Fire/Explosion	0	0	0	13	14	102	115
Submersion	2	5	96.2	15	28	35	52
Other	11	11	11.9	485	572	510	1,007
Total	538	610	5.7	31,401	45,205	75,736	107,675

TABLE 1.13

1985 HIT AND RUN CRASHES AND INJURIES BY ACCIDENT TYPE*

Type of Crash	Fatal Crashes	Number Killed	Injury Crashes	Number Injured	Property Damage Crashes	Total Crashes
Collision With:						
Other Motor Vehicle	2	4	773	1,073	2,903	3,678
Parked Motor Vehicle	0	0	118	145	7,412	7,530
Railroad Train	0	0	0	0	0	0
Bicyclist	1	1	145	153	10	156
Pedestrian	3	3	200	208	2	205
Animal	0	0	1	1	14	15
Fixed Object	1	1	125	151	1,312	1,438
Other Object	0	0	3	3	29	32
Non-Collision:						
Overturn	1	1	31	43	49	81
Fire/Explosion	0	0	0	0	2	2
Other/Unknown	0	0	9	9	32	41
Total	8	10	1,405	1,786	11,765	13,178

* The type of crash is determined by the first harmful event.

TABLE 1.14

1985 CRASHES BY LIGHT CONDITION

Light Condition	Fatal Crashes	Personal Injury Crashes	Property Damage Crashes	All Crashes
Daylight	261	19,503	43,842	63,607
Dawn/Dusk	28	2,049	4,992	7,069
Dark/Street Lights On	79	5,771	14,938	20,788
Dark/No Street Lights	164	3,494	6,787	10,445
Other/Unknown	6	584	5,177	5,766
Total	538	31,401	75,736	107,675

TABLE 1.15

1985 CRASHES BY WEATHER CONDITION

Weather Condition	Fatal Crashes	Personal Injury Crashes	Property Damage Crashes	All Crashes
Clear	303	16,551	36,779	53,633
Cloudy	157	8,854	19,966	28,977
Rain	33	2,683	5,436	8,152
Snow	22	1,834	6,325	8,183
Sleet/Hail	0	101	427	528
Fog/Smog/Smoke	10	407	863	1,280
Blowing Sand/Dust	5	231	555	791
Severe Crosswinds	2	53	141	196
Other	2	67	287	356
Not Stated/Unknown	4	620	4,957	5,579
Total	538	31,401	75,736	107,675

TABLE 1.16

TYPES OF MOTOR VEHICLES IN 1985 CRASHES*

Motor Vehicle Type	Fatal Crashes	Personal Injury Crashes	Property Damage Crashes	All Crashes
Passenger Car	543	42,398	103,724	146,665
Passenger Car & Trailer	0	82	208	290
Truck or Truck Tractor	30	1,203	4,170	5,403
Truck Tractor and Semi-Trailer	58	709	2,258	3,025
Truck Tractor and Twin Trailer	0	27	9	36
Truck With Other Trailer	6	127	299	432
Pickup	101	5,116	13,109	18,326
Van	24	1,338	3,675	5,037
Motorcycle	77	2,298	455	2,830
Motorscooter/Motorbike	4	55	9	68
Motorized Bike/Moped	0	73	8	81
All Terrain Vehicle	1	87	9	97
School Bus	4	191	534	729
Bus	3	163	379	545
Motorhome/Camper	1	58	218	277
Snowmobile	3	63	27	93
Farm Tractor or Equipment	7	88	107	202
Taxicab	2	95	293	390
Police Vehicle	5	141	288	434
Fire Department Vehicle	1	15	33	49
Ambulance	0	12	35	47
Military Vehicle	0	5	15	20
Road Maintenance Vehicle	0	73	288	361
Hit-and-Run Vehicle	5	1,316	11,299	12,620
Bicyclist	11	1,352	30	1,393
Pedestrian	70	1,862	8	1,940
Other	3	235	801	1,039
Total	959	59,182	142,288	202,429

* Most crashes involve more than one vehicle. For that reason, the total number of vehicles involved in crashes and listed here is greater than the number of crashes.

TABLE 1.17

1985 CRASHES BY ROAD SURFACE CONDITION

Road Surface Condition	Fatal Crashes	Personal Injury Crashes	Property Damage Crashes	All Crashes
Dry	389	18,895	37,570	56,854
Wet	64	5,360	11,113	16,537
Snow/Slush	25	1,566	5,231	6,822
Ice or Packed Snow	48	4,575	16,633	21,256
Other	7	400	689	1,096
Not Stated/Unknown	5	606	4,500	5,110
Total	538	31,401	75,736	107,675

TABLE 1.18

1985 CRASHES BY ROAD DESIGN

Road Design	Fatal Crashes	Personal Injury Crashes	Property Damage Crashes	All Crashes
Freeway	36	2,197	5,564	7,797
Other Divided Highway	59	3,569	5,912	9,540
One-Way Street	7	869	1,597	2,473
4-6 Lanes Undivided-Two-Way	46	5,979	9,832	15,857
3 Lanes Undivided	2	173	306	481
2 Lanes Undivided-Two-Way	381	14,342	26,042	40,765
Alley/Driveway	0	354	1,475	1,829
Other	5	724	4,330	5,059
Not Stated/Unknown	2	3,194	20,678	23,874
Total	538	31,401	75,736	107,675

TABLE 1.19

APPARENT CONTRIBUTING FACTORS IN 1985 CRASHES

Apparent Contributing Factors	Crash Severity			Number of People Affected by the Factor	
	Fatal Crashes	Personal Injury Crashes	Property Damage Crashes	Killed	Injured
Illegal/Unsafe Speed	184	6,397	10,466	210	9,692
Driver Inattention/ Distraction	146	11,773	19,922	153	17,452
Physical Impairment	142	3,690	3,367	161	5,134
Failure to Yield Right of Way	118	7,365	11,902	130	11,347
Driving Left of Roadway Center--Not Passing	90	929	1,309	108	1,539
Pedestrian Violation/Error	52	905	70	52	967
Disregard For Traffic Control Device	47	2,374	2,436	56	3,885
Driver Inexperience	34	2,181	3,215	40	3,070
Improper/Unsafe Lane Use	33	1,590	4,704	37	2,209
Vision Obscured	26	1,711	2,947	26	2,512
Improper Passing/ Overtaking	21	624	1,612	25	913
Improper Parking/ Starting/Stopping	13	518	1,698	14	759
Improper Turn	13	1,003	2,828	20	1,450
Defective Equipment	10	257	901	10	355
Following Too Closely	7	2,494	3,963	10	3,683
Unsafe Backing	4	307	2,974	4	407
Impeding Traffic	2	174	302	2	261
No/Improper Signal	1	202	406	1	300
Other	102	4,188	8,153	125	5,990
Total*	1,045	48,682	83,175	1,184	71,925

* Many crashes have more than one contributing factor.

For Contributing Factors broken down by Driver Age, see Table 1.11.

TABLE 1.20

MOTOR VEHICLE REGISTRATIONS, 1981 - 1985

Type of Vehicle	1981	1982	1983	1984	1985
Passenger Cars	2,092,170	2,157,922	2,185,457	2,258,877	2,339,782
Pickup Trucks	410,349	464,801	469,116	490,087	500,744
Farm Trucks	72,234	50,303	45,147	42,502	38,196
Gross Weight Trucks	216,965	51,926	48,269	49,384	54,694
Urban Zone Trucks	7,111	5,720	4,306	2,792	0
Commercial Zone Trucks	2	348	484	595	855
Minnesota Based Prorate Trucks	21,426	20,951	22,484	24,934	24,975
Recreational Vehicles	35,187	31,926	31,791	32,451	33,133
Motorcycles	166,151	159,345	155,502	153,851	151,449
Mopeds	13,955	14,725	14,516	13,623	13,034
School Buses	4,031	4,002	4,113	3,998	4,185
Buses	3,256	3,459	3,490	3,504	3,575
Van Pool	0	0	0	137	180
Tax Exempt Vehicles	47,694	48,732	49,811	51,525	53,510
Motor Vehicle Subtotal	3,094,939	3,014,160	3,034,486	3,127,830	3,218,582
Trailers	565,914	614,631	565,046	615,004	602,795
Collector's Items	26,579	30,569	35,048	39,981	45,269
Grand Total	3,687,432	3,659,360	3,634,580	3,782,815	3,866,646

TABLE 1.21

1985 CRASHES BY TYPE OF ROADWAY

Type of Roadway	Fatal Crashes	Personal Injury Crashes	Property Damage Crashes	All Crashes
Interstate	27	1,912	5,681	7,620
Trunk Highway	248	10,438	21,478	32,164
County State Aid Highway	173	8,129	14,397	22,699
County Road	22	849	1,186	2,057
Township Road	20	806	934	1,760
Local Street	47	8,328	23,519	31,894
Other Road	1	939	8,541	9,481
Total	538	31,401	75,736	107,675

TABLE 1.22

1985 CRASHES BY TRAFFIC CONTROL DEVICE

Traffic Control Device	Fatal Crashes	Personal Injury Crashes	Property Damage Crashes	All Crashes
None	346	16,887	44,943	62,176
Traffic Signal	24	6,064	10,600	16,688
Overhead Flashers	2	113	184	299
Stop Sign-All Approaches	5	507	1,240	1,752
Other Stop Sign	85	5,252	10,186	15,523
Yield Sign	10	609	1,147	1,766
Flagman, Officer, or School Patrol	0	48	72	120
School Bus Stop Arm	0	23	41	64
School Zone Sign	0	18	23	41
RR Xing Gate	1	16	35	52
RR Flashing Lights	2	33	42	77
RR Xing Stop Sign	1	20	19	40
RR Other	4	31	53	88
No Pass Zone	37	408	402	847
Other	10	300	620	930
Unknown	11	1,072	6,129	7,212
Total	538	31,401	75,736	107,675

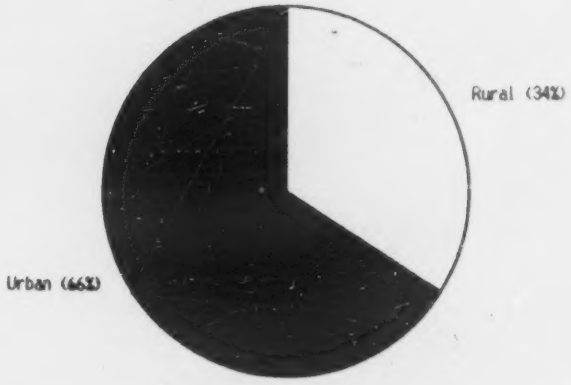
TABLE 1.23

LOCATION OF 1985 CRASHES BY POPULATION

Population of City or Township	Fatal Crashes	Personal Injury Crashes	Property Damage Crashes	All Crashes
100,000 & Over	50	7,381	18,789	26,220
50,000- 99,999	16	1,768	4,277	6,061
25,000- 49,999	39	5,299	11,638	16,976
10,000- 24,999	43	4,632	10,291	14,966
5,000- 9,999	33	2,186	4,827	7,046
2,500- 4,999	19	1,026	2,391	3,436
1,000- 2,499	14	554	1,302	1,870
Under 1,000	324	8,555	22,221	31,100
Total	538	31,401	75,736	107,675

TOTAL CRASHES BY LOCATION

FIGURE 1.04



FATAL CRASHES BY LOCATION

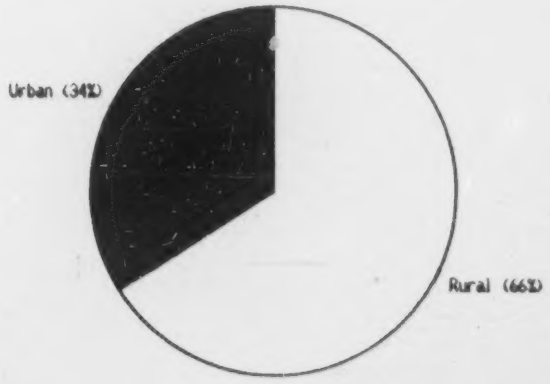


FIGURE 1.05

COUNTY CRASH MAP
Minnesotans Killed/Injured in 1985

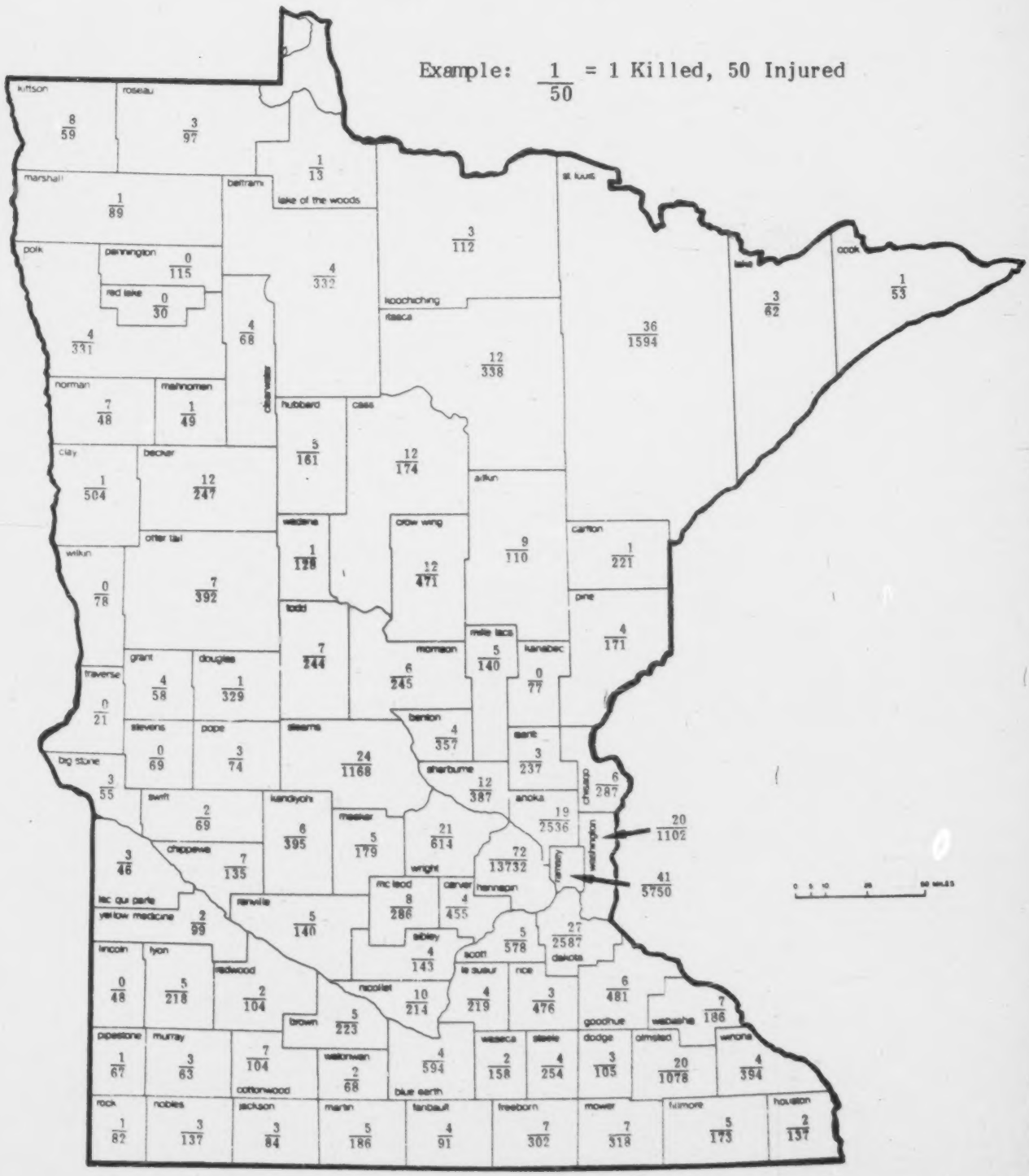


TABLE 1.24

1985 COUNTY CRASH REPORT

County	All Crashes 1985	Average Crashes 1980-1984	Fatal Crashes 1985	Number Killed 1985	Average Killed 1980-1984	Personal Injury Crashes 1985	Number Injured 1985	Average Injured 1980-1984	Property Damage Crashes 1985
Aitkin	210	243	7	9	5	64	110	126	139
Anoka	4,690	4,296	18	19	25	1,698	2,536	2,193	3,244
Becker	435	485	7	12	8	171	247	298	257
Beltrami	656	584	3	4	8	214	332	274	439
Benton	665	612	4	4	7	224	357	305	437
Big Stone	115	112	3	3	3	33	55	54	79
Blue Earth	1,618	1,541	4	4	9	430	594	568	1,184
Brown	519	585	5	5	4	148	223	247	366
Carlton	497	466	1	1	6	152	221	202	344
Carver	945	849	4	4	8	294	455	431	647
Cass	311	360	10	12	10	96	174	205	205
Chippewa	242	238	6	7	6	83	135	106	153
Chisago	589	539	5	6	7	189	287	258	395
Clay	1,300	1,151	1	1	9	339	504	406	960
Clearwater	103	103	4	4	3	41	68	63	58
Cook	122	110	1	1	1	39	53	53	82
Cottonwood	185	199	3	7	2	60	104	83	122
Crow Wing	1,111	1,031	9	12	15	317	471	448	785
Dakota	5,580	4,599	26	27	28	1,697	2,587	2,182	3,857
Dodge	241	247	3	3	2	69	105	128	169
Douglas	740	656	1	1	7	237	329	301	502
Faribault	246	249	3	4	4	63	91	106	180
Fillmore	343	338	5	5	4	112	173	172	226
Freeborn	774	777	6	7	7	204	302	334	564
Goodhue	967	917	6	6	9	315	481	402	646
Grant	93	92	4	4	2	33	58	45	56
Hennepin	134,135	29,515	67	72	82	9,947	13,732	1,254	24,121
Houston	300	295	2	2	4	95	137	152	203
Hubbard	236	254	5	5	4	96	161	141	135
Isanti	408	394	3	3	4	152	237	217	253
Itasca	617	692	9	12	10	229	338	366	379
Jackson	193	230	3	3	2	57	84	93	133
Kanabec	185	176	0	0	4	54	77	80	131
Kandiyohi	981	980	5	6	8	276	395	428	700
Kittson	87	69	4	8	1	28	59	32	55
Koochiching	227	266	3	3	3	75	112	156	149
Lac Qui Parle	116	152	3	3	3	28	46	58	85
Lake	207	223	2	3	2	48	62	102	157
Lake of The Woods	49	57	1	1	1	10	13	32	38
LeSueur	507	490	4	4	4	149	219	220	354

TABLE 1.24 CONT'D

1985 COUNTY CRASH REPORT

County	All Crashes 1985	Average Crashes 1980-1984	Fatal Crashes 1985	Number Killed 1985	Average Killed 1980-1984	Personal Injury Crashes 1985	Number Injured 1985	Average Injured 1980-1984	Property Damage Crashes 1985
Lincoln	92	108	0	0	2	32	48	51	60
Lyon	357	405	5	5	6	145	218	202	207
Mcleod	707	673	6	8	6	190	286	282	511
Mahnomen	63	71	1	1	2	30	49	36	32
Marshall	128	135	1	1	2	52	89	77	75
Martin	384	434	4	5	5	127	186	199	253
Meeker	361	399	4	5	6	113	179	16	244
Mille Lacs	313	357	5	5	7	91	140	188	217
Morrison	575	577	5	6	8	170	245	315	400
Mower	809	786	7	7	5	223	318	327	579
Murray	132	132	3	3	3	45	63	60	84
Nicollet	540	525	8	10	4	141	214	217	391
Nobles	396	444	3	3	2	100	137	153	293
Norman	92	104	4	7	2	27	48	44	61
Olmsted	2,613	2,329	17	20	14	746	1,078	988	1,850
OtterTail	813	808	5	7	12	263	392	406	545
Pennington	254	278	0	0	3	93	115	147	161
Pine	334	317	4	4	8	116	171	151	214
Pipestone	193	182	1	1	2	53	67	62	139
Polk	661	630	4	4	7	216	331	263	441
Pope	165	160	2	3	3	46	74	63	117
Ramsey	17,192	15,213	38	41	40	4,237	5,756	5,353	12,917
Red Lake	77	72	0	0	3	21	30	31	56
Redwood	218	263	2	2	3	67	104	126	149
Renville	224	271	4	5	6	80	140	132	140
Rice	1,119	1,004	3	3	8	314	476	457	802
Rock	200	203	1	1	2	51	82	64	1,789
Roseau	184	144	3	3	3	56	97	68	125
St. Louis	3,590	3,706	33	36	36	1,101	1,594	1,508	2,456
Scott	1,404	1,130	5	5	8	401	578	554	998
Sherburne	638	594	10	12	8	221	387	322	407
Sibley	242	223	4	4	2	93	143	116	145
Stearns	2,871	2,767	22	24	23	795	1,168	1,171	2,054
Steele	632	616	4	4	3	188	254	246	440
Stevens	193	174	0	0	1	45	69	66	148
Swift	143	175	2	2	1	45	69	73	96
Todd	387	394	6	7	6	139	244	193	242
Traverse	49	62	0	0	2	16	21	33	33
Wabasha	397	414	7	7	6	123	186	190	267
Wadena	253	257	1	1	2	80	128	109	172
Waseca	359	325	2	2	5	106	158	149	251
Washington	2,512	2,233	18	20	19	752	1,102	1,081	1,742
Watonwan	162	206	2	2	1	45	68	83	115
Wilkin	156	182	0	0	4	55	78	85	101
Winona	1,193	1,137	4	4	10	293	394	410	896
Wright	1,309	1,112	16	21	16	430	614	565	863
Yellow Medicine	174	181	2	2	4	62	99	89	110

TABLE 1.25

1985 CRASHES BY CITY*

City	Fatal Crashes	Number Killed	Non-Fatal Injury Crashes	Number Injured	Property Damage Crashes	Total Crashes
Albert Lea	0	0	114	160	388	502
Alexandria	0	0	119	162	302	421
Andover	5	5	62	89	76	143
Anoka	1	1	168	265	380	549
Apple Valley	1	2	126	229	365	492
Arden Hills	1	1	76	111	277	354
Austin	0	0	149	195	401	550
Bemidji	0	0	123	176	302	425
Blaine	2	2	291	439	563	856
Bloomington	6	6	887	1,223	2,533	3,426
Brainerd	0	0	111	150	425	536
Brooklyn Center	3	3	370	519	744	1,117
Brooklyn Park	5	5	357	518	694	1,056
Burnsville	3	3	394	571	833	1,230
Champlin	1	1	64	92	152	217
Chanhassen	2	2	90	139	163	255
Chaska	0	0	46	66	166	212
Chisholm	1	1	15	17	39	55
Cloquet	1	1	62	89	186	249
Columbia Heights	1	1	171	254	302	474
Coon Rapids	0	0	321	459	615	936
Cottage Grove	1	1	81	108	202	284
Crookston	0	0	52	76	96	148
Crystal	0	0	142	196	262	404
Detroit Lakes	0	0	69	91	102	171
Duluth	7	7	501	698	1,185	1,696
Eagan	1	1	174	246	470	645
East Bethel	2	2	24	36	56	82
East Grand Forks	1	1	80	110	209	290
Eden Prairie	2	2	248	364	524	774
Edina	3	3	303	399	735	1,041
Elk River	0	0	70	116	124	194
Eveleth	0	0	13	19	63	76
Fairmont	1	1	76	104	169	246
Falcon Heights	0	0	49	65	96	145
Faribault	1	1	129	191	324	454
Fergus Falls	0	0	71	98	227	298
Fridley	2	2	343	501	631	976
Golden Valley	3	3	320	433	714	1,037
Grand Rapids	0	0	55	79	162	217
Ham Lake	3	3	49	82	94	146
Hastings	1	1	100	140	228	329
Hibbing	3	3	130	192	309	442
Hopkins	0	0	160	235	344	504
Hutchinson	0	0	55	73	241	296
International Falls	0	0	33	50	85	118
Inver Grove Heights	2	2	162	250	315	479
Lake Elmo	2	3	35	69	54	91
Litchfield	0	0	32	42	95	127
Little Canada	2	2	109	139	268	379
Little Falls	0	0	43	56	166	209
Mankato	0	0	314	421	868	1,182

*Cities of at least 5,000 population.

TABLE 1.25 CONT'D.

1985 CRASHES BY CITY*

City	Fatal Crashes	Number Killed	Non-Fatal Injury Crashes	Number Injured	Property Damage Crashes	Total Crashes
Maple Grove	0	0	127	167	236	363
Maplewood	2	3	249	334	711	962
Marshall	0	0	67	93	94	161
Mendota Heights	3	3	81	117	185	269
Minneapolis	26	28	4,702	6,466	11,720	16,448
Minnetonka	3	3	373	494	792	1,168
Montevideo	1	1	29	37	89	119
Moorhead	1	1	223	316	768	992
Morris	0	0	17	20	119	136
Mounds View	0	0	67	90	139	206
New Brighton	0	0	99	125	275	374
New Hope	2	2	107	135	251	360
New Ulm	1	1	69	90	196	266
Northfield	0	0	55	72	199	254
North Mankato	2	3	39	48	112	153
North St. Paul	1	1	80	123	188	269
Oakdale	2	2	43	58	103	148
Orono	0	0	68	88	132	200
Owatonna	2	2	96	117	283	381
Plymouth	5	5	188	245	586	779
Prior Lake	0	0	62	85	157	219
Ramsey	2	3	49	65	60	111
Red Wing	1	1	135	206	297	433
Redwood Falls	0	0	26	37	72	98
Richfield	2	2	389	534	957	1,348
Robbinsdale	0	0	114	156	269	383
Rochester	3	3	479	676	1,312	1,794
Rosemount	1	1	58	86	146	205
Roseville	1	2	259	332	844	1,104
St. Cloud	6	6	444	592	1,481	1,931
St. Louis Park	1	1	437	554	1,054	1,492
St. Paul	24	25	2,859	3,836	9,097	11,980
St. Peter	1	1	42	62	114	157
Sauk Rapids	1	1	47	75	104	152
Shakopee	3	3	135	184	318	456
Shoreview	2	2	78	122	201	281
South St. Paul	0	0	133	181	354	487
Spring Lake Park	0	0	66	94	126	192
Stillwater	0	0	71	97	290	361
Thief River Falls	0	0	69	87	133	202
Vadnais Heights	0	0	63	91	133	196
Virginia	1	1	51	62	191	243
Waseca	0	0	44	63	149	193
West St. Paul	3	3	165	239	328	496
White Bear Lake	2	2	165	240	482	649
Willmar	0	0	142	206	516	658
Winona	0	0	175	237	561	736
Woodbury	2	2	95	140	207	304
Worthington	1	1	49	65	210	260

*Cities of at least 5,000 population.

TABLE 1.26

1985 CRASHES BY MONTH

	Fatal Crashes	Severe Injury Crashes	Moderate Injury Crashes	Possible Injury Crashes	Property Damage Crashes	Total Crashes
January	34	341	919	1,220	7,773	10,287
February	32	311	799	967	6,182	8,291
March	21	311	875	973	6,299	8,479
April	34	396	912	815	4,492	6,649
May	59	505	1,195	1,005	5,126	7,890
June	53	557	1,218	1,210	5,355	8,393
July	57	580	1,308	1,096	5,211	8,252
August	64	552	1,224	1,237	5,476	8,553
September	45	454	1,056	1,155	5,853	8,563
October	47	452	1,007	1,053	5,740	8,299
November	60	405	1,102	1,356	8,540	11,463
December	32	314	992	1,529	9,689	12,556
Total	538	5,178	12,607	13,616	75,736	107,675

FIGURE 1.06

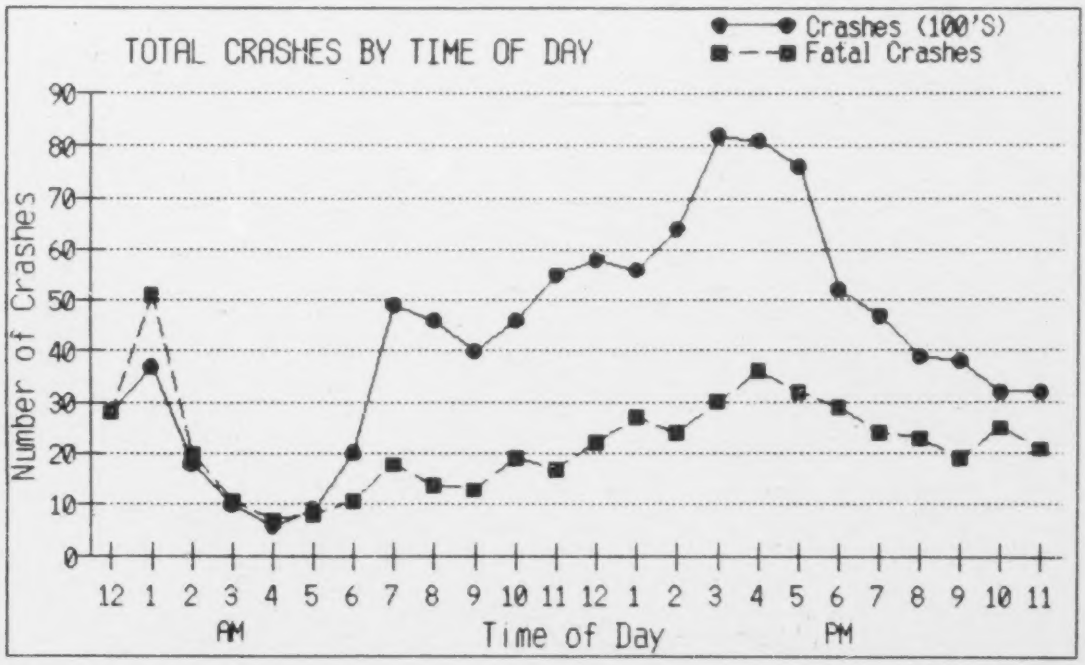


TABLE 1.27

1985 CRASHES BY TIME OF DAY AND DAY OF WEEK

Hour Beginning	Total Crashes	Fatal Crashes	Monday All	Monday Fatal	Tuesday All	Tuesday Fatal	Wednesday All	Wednesday Fatal	Thursday All	Thursday Fatal	Friday All	Friday Fatal	Saturday All	Saturday Fatal	Sunday All	Sunday Fatal
Midnight	2,792	28	211	1	239	2	216	4	313	5	369	2	768	6	676	8
1:00	3,684	51	179	3	320	3	272	5	389	6	442	2	1,006	16	1,076	16
2:00	1,798	20	94	0	173	3	121	2	179	3	214	1	511	6	506	5
3:00	991	11	61	0	94	1	64	1	102	1	108	2	297	3	265	3
4:00	616	7	47	0	55	1	52	0	65	1	65	0	188	3	174	2
5:00	853	8	112	0	96	0	108	1	92	1	105	1	181	3	159	2
6:00	2,003	11	354	2	359	3	319	2	346	0	321	1	148	1	156	2
7:00	4,890	18	888	3	976	5	842	2	937	2	876	4	225	1	146	1
8:00	4,597	14	815	1	812	6	734	2	843	3	832	1	347	0	214	1
9:00	4,029	13	638	2	669	1	525	4	636	4	651	2	553	0	357	0
10:00	4,624	19	738	5	635	1	600	2	630	2	735	4	797	3	489	2
11:00	5,453	17	798	3	758	3	717	1	741	2	941	2	912	3	586	3
Noon	5,838	22	808	2	795	2	762	5	809	3	993	3	998	1	673	6
1:00	5,553	27	814	6	742	3	738	6	783	1	922	3	907	4	647	4
2:00	6,376	24	977	4	978	3	850	3	917	2	1,116	6	838	3	700	3
3:00	8,204	30	1,327	2	1,274	8	1,179	4	1,244	6	1,489	2	969	3	722	5
4:00	8,089	36	1,327	5	1,266	7	1,225	3	1,300	6	1,535	3	786	4	650	8
5:00	7,636	32	1,273	8	1,171	5	1,168	1	1,191	8	1,444	3	783	4	606	3
6:00	5,230	29	783	5	709	3	705	2	691	7	988	3	784	6	570	3
7:00	4,679	24	672	1	631	1	580	1	663	4	878	3	740	10	515	4
8:00	3,925	23	473	5	443	2	513	6	556	0	818	8	677	0	445	2
9:00	3,751	19	455	2	475	6	468	0	587	3	722	4	677	2	367	2
10:00	3,213	25	323	1	348	0	412	4	487	5	655	9	657	4	331	2
11:00	3,209	21	296	2	311	0	347	3	453	4	770	3	757	6	275	3
Unknown	5,612	9	745	1	752	1	699	0	763	0	1,033	2	950	4	670	1
Total	107,675	538	15,208	64	15,081	70	14,216	64	15,717	79	19,022	74	16,456	96	11,975	91

TABLE 1.28

HOLIDAY CRASH SUMMARY, 1980-1985

	Year	Hours	Total Crashes	Fatal Crashes	Personal Injury Crashes	Property Damage Crashes
New Year's	1980	30	698	6	218	474
	1981	78	1,360	4	298	1,058
	1982	54	640	0	159	414
	1983	54	577	1	160	416
	1984	78	931	1	194	736
	1985	30	446	1	112	333
	1986	30	249	3	70	176
Memorial Day	1980	78	693	8	316	369
	1981	78	876	9	298	569
	1982	78	548	6	215	327
	1983	78	826	9	304	513
	1984	78	696	7	246	443
	1985	78	715	5	281	429
July 4th	1980	78	827	16	339	472
	1981	78	788	13	328	447
	1982	78	606	12	242	355
	1983	78	750	5	293	452
	1984	30	328	2	140	186
	1985	30	353	5	136	212
Labor Day	1980	78	899	11	310	578
	1981	78	736	7	273	456
	1982	78	667	7	237	423
	1983	78	793	5	299	489
	1984	78	748	5	274	496
	1985	78	814	6	279	529
Thanksgiving	1980	102	2,121	8	486	1,627
	1981	102	961	7	260	694
	1982	102	1,035	10	289	736
	1983	102	1,350	5	290	1,055
	1984	102	1,491	9	440	1,042
	1985	102	2,054	8	461	1,585
Christmas	1980	30	206	5	46	155
	1981	78	893	7	211	675
	1982	54	471	1	112	358
	1983	78	1,435	3	313	1,119
	1984	30	174	1	52	121
	1985	30	178	0	45	133

TABLE 1.29

1985 HOLIDAY CRASHES

Holiday	Hours	Total Crashes	Fatalities	Personal Injuries
New Year's 6:00 PM Tuesday, Dec. 31, 1985 to Midnight Wednesday, Jan. 1, 1986	30	249	3	112
Memorial Day 6:00 PM Friday, May 24 to Midnight Monday, May 27	78	715	5	395
July 4 6:00 PM Wednesday, July 3 to Midnight Thursday, July 4	30	353	5	211
Labor Day 6:00 PM Friday, August 31 to Midnight Monday, September 3	78	814	7	419
Thanksgiving 6:00 PM Wednesday, November 27 to Midnight Sunday, December 1	102	2,054	8	461
Christmas 6:00 PM Tuesday, December 24 to Midnight Wednesday, December 25	30	178	0	66

Part II

Alcohol Related Crashes

In June 1985, the Department of Public Safety conducted the first drinking and driving roadside survey done anywhere in the United States since 1976. The major finding was that the drunken driving problem has been cut in half in Minnesota in the last decade. Voluntary breath tests of drivers were given to a sample of the traffic stream at 16 locations during nighttime hours. The proportion of drivers with an alcohol concentration of .10 or more was less than half that found in similar surveys in the seventies. With half as many drunken drivers on the road and twice as many DWI arrests being made, the chance of a drinking driver being stopped is nearly four times as great.

In March 1986, Minnesota became the 39th state to enact a law making it illegal for persons under the age of 21 to drink alcohol. The law takes effect September 1, 1986. Persons reaching their nineteenth birthday before then will be given 21-year-old status.

There are currently two ways of measuring alcohol involvement in Minnesota motor vehicle accidents. One is by the police officer's indication of the driver's physical condition. If "under the influence" or "had been drinking" are marked on the traffic accident report, the accident is considered alcohol-related. Using this measure, only 194 or (32 percent) of the 610 fatalities were alcohol-related. However, with a second resource of blood alcohol concentration test results from coroner's reports, a more accurate picture of alcohol involvement can be drawn. A composite number of 261 (43 percent) alcohol-related fatalities can be reached by combining these two measures. This compares with a 1984 national study which showed that 53 percent of motor-vehicle fatalities were alcohol-related. Minnesota figures are still conservative because alcohol tests of surviving drivers are not required by law and are not reflected in the statistics.

* 1985 showed the lowest percentage ever recorded of drivers killed who had been drinking, decreasing from 58 percent in 1984 to 47 percent in 1985. The largest drop was in young male drivers. Drivers who were intoxicated (over .10) decreased from 47 percent to 37 percent during the same time period, also the lowest ever recorded.

* A higher percentage of dead drivers age 16-20 had been drinking than any other five-year age category; however, 26-30-year-olds showed the highest percentage of drunk drivers (.10 or higher).

* Single-vehicle accidents yielded a much higher percentage of alcohol-involvement than multi-vehicle accidents. Eighty-six percent of fatalities in submersions and collisions with fixed objects and 78 percent of fatalities in overturns were alcohol-related. The highest percentage of alcohol-involved multi-vehicle fatalities was in collisions with railroad trains (57 percent), however, fatalities in collisions with two or more other motor vehicles yielded only 36 percent alcohol involvement.

* The ratio of male to female drinking drivers killed has decreased from 14:1 in 1976 to 5:1 in 1985.

* Ninety four percent of tested drivers who died from accidents occurring between midnight and 3:00 a.m. had been drinking. This compares with 47 percent of tested drivers for all time periods.

* In December accidents, no dead drivers who were tested had been drinking. In April accidents, 80 percent of drivers tested had been drinking.

* 1985 pedestrian fatalities showed the same dramatic decrease in percentage drinking as driver fatalities -- from 53 percent in 1984 to 41 percent in 1985, and from 47 percent drunk in 1984 to 27 percent drunk in 1985.

* All pedestrians killed in accidents occurring between midnight and 3:00 a.m. who were tested had been drinking, whereas only 41 percent of pedestrians killed during all time periods had positive alcohol test results.

* Of all pedestrians killed, 21-to-25-year-olds had the greatest percentage of positive alcohol test results (86 percent); the age group of 66 and older had the lowest percentage (seven percent).

TABLE 2.01

DRINKING DRIVER SUMMARY - 1976-1985

	1976	1977	1978	1979	1980	1981	1982	1983	1984	1985
Drunken Driving Arrests	19,419	16,976	18,078	18,092	22,788	27,034	28,048	32,155	36,638	35,383
Alcohol-Related Driver License Revocations	14,251	17,741	24,357	24,966	30,481	32,043	36,024	41,311	43,502	40,807
For Conviction of DWI Charge	NA	NA	15,512	14,797	17,406	19,009	9,400	5,462	5,334	4,652
Administrative Revocations For Refusing Test	NA	NA	3,344	3,427	3,863	4,427	8,456	11,155	11,413	9,219
For Failing Test (.10 or higher)	NA	NA	5,501	6,742	9,212	8,607	18,168	24,694	26,755	26,936
Drivers Killed	478	476	576	523	519	437	321	345	383	372
Tested (died within 4 hours)	61%	58%	66%	63%	65%	66%	72%	75%	83%	79%
Positive (had been drinking)	64%	60%	63%	58%	69%	62%	54%	56%	58%	47%
Drunk (.10 or higher)	53%	54%	51%	45%	58%	52%	48%	45%	47%	37%

TABLE 2.02

DWI ARRESTS BY AGE 1981-1985

Age	1981	1982	1983	1984	1985
Under 15	5	4	7	6	8
15	16	13	21	21	24
16	165	202	169	185	171
17	542	503	546	500	446
18	1,203	1,327	1,284	1,342	1,109
19	1,744	1,789	1,983	2,166	1,864
20	1,752	1,840	2,040	2,370	2,035
21	1,691	1,682	2,028	2,377	2,053
22	1,551	1,683	1,931	2,269	2,170
23	1,376	1,504	1,883	2,202	2,024
24	1,289	1,504	1,682	2,002	2,007
25-29	5,029	5,229	6,299	7,511	7,618
30-34	3,362	3,450	3,948	4,720	4,933
35-39	2,219	2,273	2,701	3,013	3,200
40-44	1,464	1,589	1,796	2,078	2,062
45-49	1,153	1,119	1,239	1,394	1,292
50-54	916	849	975	916	911
55-59	740	688	738	704	686
60-64	397	412	471	443	395
65 & over	420	388	414	419	375
TOTAL	27,034	28,048	32,155	36,638	35,383

TABLE 2.03

DWI ARRESTS BY SEX

Age	1981	1982	1983	1984	1985
Male	23,853	24,264	27,521	31,327	30,135
Female	3,181	3,784	4,634	5,311	5,248

TABLE 2.04

AGE OF PERSONS KILLED AND INJURED IN 1985 ALCOHOL-RELATED CRASHES*

Age	Killed	Injured
0 - 4	1	70
5 - 9	1	80
10 - 14	2	108
15 - 19	48	1,507
20 - 24	43	1,940
25 - 29	26	1,167
30 - 34	19	644
35 - 39	9	408
40 - 44	7	246
45 - 49	8	206
50 - 54	6	150
55 - 59	4	119
60 - 64	6	79
65 - 69	1	60
70 - 74	5	28
75 & Older	3	31
Not Stated	5	360
Total	194	7,203

* Drivers or pedestrians in these crashes were listed on the traffic accident report as "under the influence" or "had been drinking".

In addition to the 194 people who were killed in alcohol-related accidents as shown above, 67 persons were killed in accidents involving a driver whose blood alcohol test showed at least some alcohol. This brings the total to 261 or 43 percent of all fatalities. The following table compares Minnesota percentages of alcohol-related crashes and injuries with the previous year and with national figures obtained from a 1982 study by the National Highway Traffic Safety Administration and a 1984 study of fatal accidents compiled by the Fatal Accident Reporting System.

TABLE 2.05

PERCENT ALCOHOL-RELATED

	Minnesota		United States	
	1984	1985	1982	1984
Deaths	52%	43%	50%	53%
Injuries	19%	16%	17%	N/A
Property Damage Crashes	7%	6%	8%	N/A

Since alcohol tests of surviving drivers are not required by law in Minnesota and in many other states, percentages shown are somewhat conservative.

FIGURE 2.01

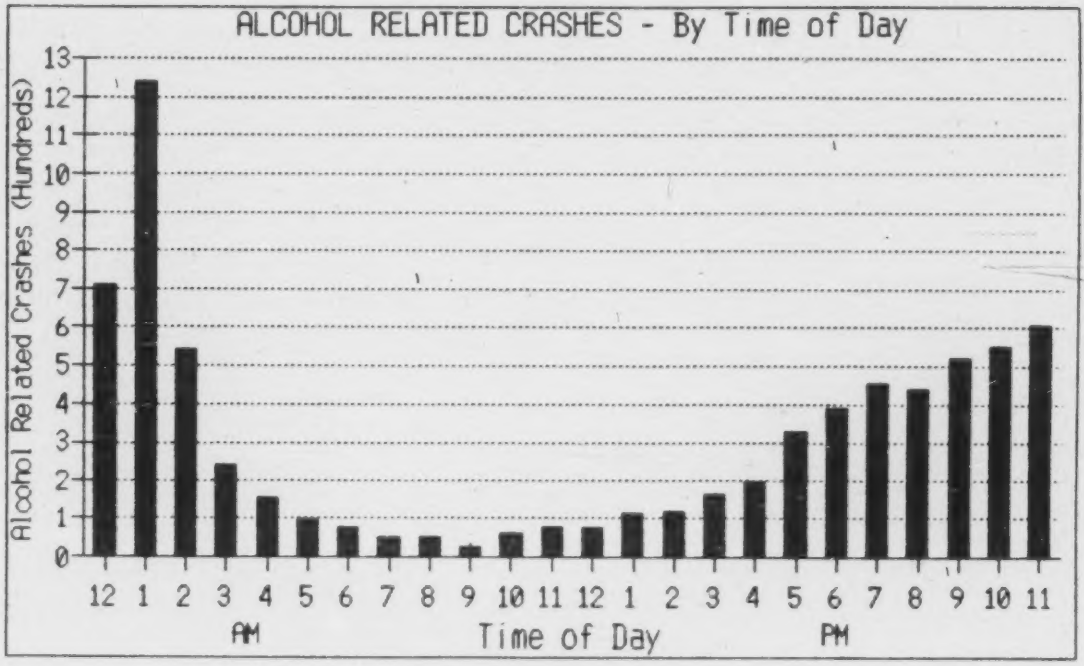

ALCOHOL RELATED CRASHES - By Time of Day
Alcohol Related Crashes (Hundreds)
0 1 2 3 4 5 6 7 8 9 10 11 12 13
12 1 2 3 4 5 6 7 8 9 10 11 12 1 2 3 4 5 6 7 8 9 10 11
AM
Time of Day
PM

FIGURE 2.02

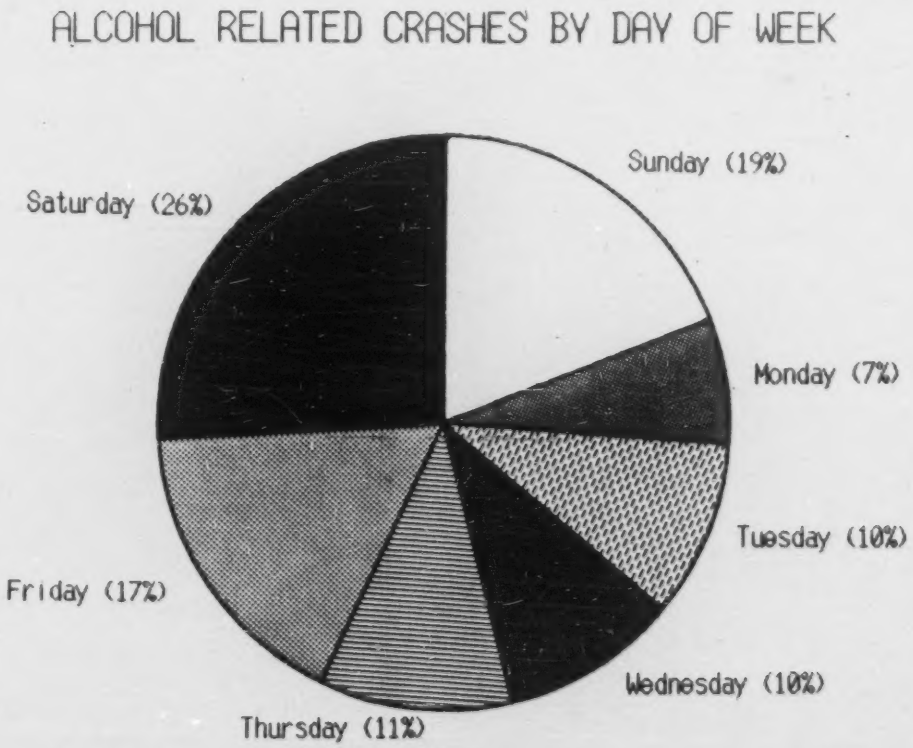


TABLE 2.06

ALCOHOL-RELATED FATALITIES BY ACCIDENT TYPE

	Controller* Drinking	No Controller Drinking
Collision with:		
Other Motor Vehicle	93 (36%)	164
Railroad Train	4 (57%)	3
Bicyclist	1 (17%)	5
Pedestrian	21 (40%)	31
Animal	0	1
Fixed Object	81 (86%)	13
Other Object	1	1
Non-Collision:		
Overturn	49 (78%)	14
Submersion	6 (86%)	1
Other	5 (46%)	6
Total	261 (52%)**	239 (48%)**

* A person who was in a position of control during the accident, such as driver, pedestrian or bicyclist.

** Of known cases.

TABLE 2.07

1985 ALCOHOL INVOLVEMENT BY FATALITY TYPE

Fatality Type	Total Killed	Total Tested	Total Drinking (.01 or more)	Total Drunk (.10 or more)
Driver	301	239	105	83
Passenger	140	56	29	17
Motorcycle Driver	63	52	34	25
Motorcycle Passenger	14	9	7	
Pedestrian	65	39	15	10
Bicyclist	10	2	1	0
Moped Passenger	1	1	1	1
All-Terrain Vehicle Driver	1	0	N/A*	N/A
Other Driver	4	4	0	N/A
Other Passenger	2	2	0	N/A
Other/Unknown	9	6	4	1
Total	610	410	196	137

* Not Applicable.

FIGURE 2.03

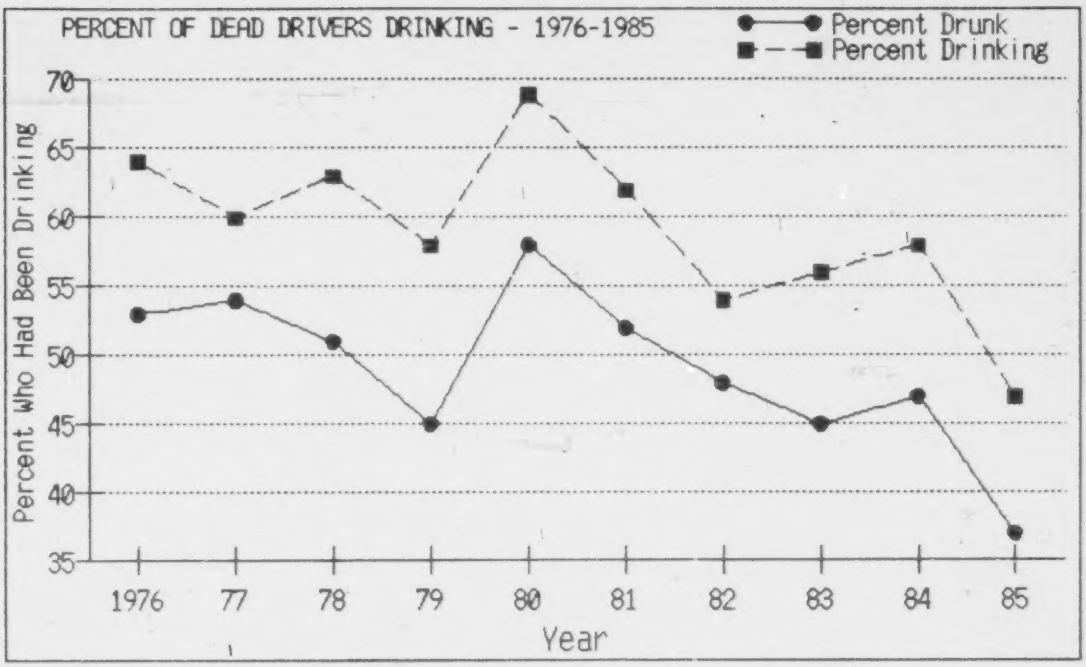


TABLE 2.08

DRINKING DRIVER FATALITY SUMMARY 1976-1985

	Killed	Tested	Drinking (.01 or more)	Drunk (.10 or more)
1976	478	289	185	154
1977	476	276	166	149
1978	576	381	241	218
1979	523	329	190	168
1980	519	337	232	195
1981	437	288	178	150
1982	321	232	126	112
1983	345	258	145	117
1984	383	318	185	149
1985	372	295	139	108

TABLE 2.09

DRINKING DRIVERS OF THOSE TESTED (.01 OR MORE)

	Male	Female	Total	Occurred Between Midnight - 3 am	Under Legal Age*
1976	173	12	185	56 (30%)	8 (under 18)
1977	148	18	166	48 (29%)	19 (11%)
1978	222	19	241	78 (32%)	32 (13%)
1979	169	21	190	57 (30%)	27 (14%)
1980	211	21	232	68 (29%)	23 (10%)
1981	162	16	178	61 (34%)	17 (10%)
1982	116	10	126	41 (33%)	9 (7%)
1983	129	16	145	38 (26%)	13 (9%)
1984	163	22	185	63 (34%)	17 (9%)
1985	116	23	139	60 (43%)	14 (10%)

TABLE 2.10

DRUNK DRIVERS OF THOSE TESTED (.10 OR MORE)

	Male	Female	Total	Occurred Between Midnight - 3 am	Under Legal Age
1976	146	8	154	56 (36%)	6 (under 18)
1977	135	14	149	48 (32%)	13 (9%)
1978	198	20	218	82 (38%)	21 (10%)
1979	149	19	168	68 (40%)	19 (11%)
1980	179	16	195	68 (35%)	17 (9%)
1981	138	12	150	81 (54%)	15 (10%)
1982	102	10	112	41 (37%)	7 (6%)
1983	105	12	117	38 (32%)	8 (7%)
1984	132	17	149	50 (34%)	12 (8%)
1985	90	18	108	49 (45%)	6 (6%)

* The age of majority was legally lowered to 18 years of age on June 1, 1973, and the legal drinking age was raised to 19 years of age on September 1, 1976.

FIGURE 2.04

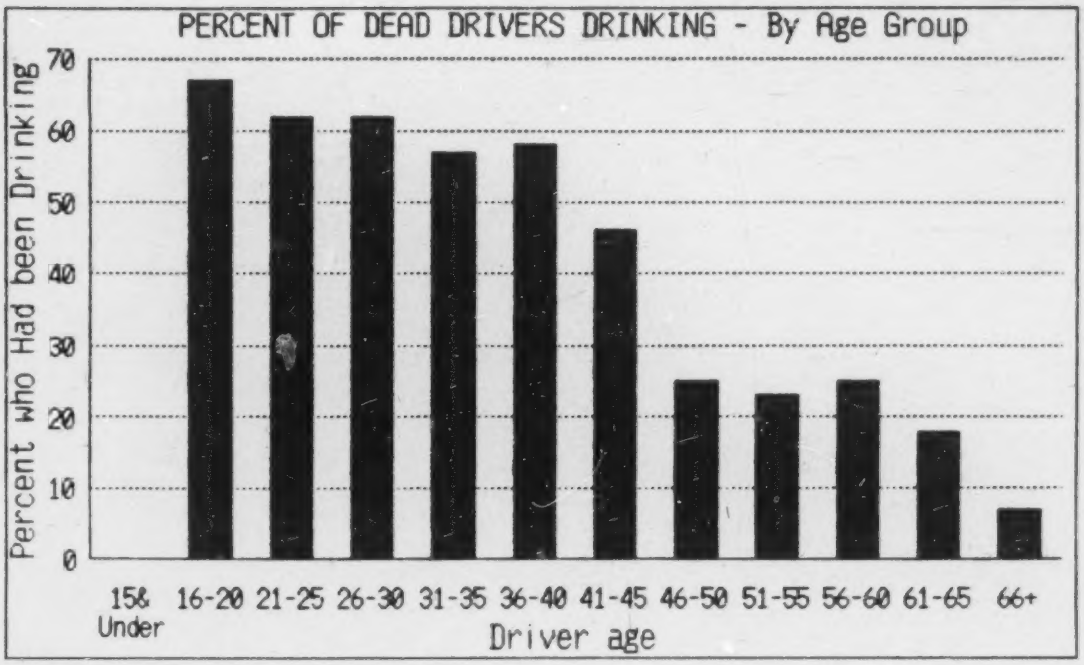


TABLE 2.11

1985 DRIVER FATALITIES' LEVEL OF ALCOHOL CONCENTRATION BY AGE

Age	Killed	Tested	Drinking (.01 or more)	Drunk (.10 or more)	Blood Alcohol Concentration .01-.04	.05-.09	.10-.14	.15-.24	.25 & Over
15 & Below	8	5	0	0					
16	4	3	1	0		1			
17	11	9	5	2	1	2	1	1	
18	11	9	8	4	1	3	1	2	1
19	26	24	15	10	4	1	2	7	1
20	12	10	8	7		1		7	
16 - 20	64	55	37 (67%)	6 (42%)	4	17	2	0	0
21 - 25	71	58	36 (62%)	31 (53%)	2	3	13	14	4
26 - 30	52	42	26 (62%)	23 (55%)		3	3	11	9
31 - 35	22	14	8 (57%)	6 (43%)	1	1	1	3	2
36 - 40	21	19	11 (58%)	9 (47%)	1	1	1	4	4
41 - 45	19	13	6 (46%)	6 (46%)				5	1
46 - 50	24	20	5 (25%)	3 (15%)	1	1		3	
51 - 55	17	13	3 (23%)	2 (15%)	1			1	1
56 - 60	12	8	2 (25%)	2 (25%)				2	
61 - 65	18	17	3 (18%)	2 (12%)	1		1	1	
66 & Above	43	30	2 (7%)	1 (3%)	1			1	0
Unknown	1	1	0	0					
Total	372	295	139 (47%)	91 (37%)	12	26	21	45	21

TABLE 2.12

1985 DRIVER FATALITIES' LEVEL OF ALCOHOL CONCENTRATION BY MONTH

Month	Killed	Tested	Drinking (.01 or more)	Drunk (.10 or more)	Blood Alcohol Concentration .01-.04	.05-.09	.10-.14	.15-.24	.25 & Over
January	23	19	4 (21%)	3 (16%)	0	1	0	2	1
February	23	20	10 (50%)	8 (40%)	1	1	3	2	2
March	14	12	7 (58%)	6 (50%)	0	1	1	4	1
April	23	20	16 (80%)	14 (70%)	2	0	2	11	1
May	48	41	22 (54%)	17 (41%)	0	5	4	9	4
June	32	29	14 (48%)	11 (38%)	2	1	2	7	2
July	43	34	17 (50%)	11 (32%)	3	3	2	6	3
August	42	32	10 (31%)	8 (25%)	1	1	4	4	0
September	32	25	18 (72%)	12 (48%)	4	2	1	6	5
October	26	12	2 (17%)	2 (17%)	0	0	1	0	1
November	48	37	19 (51%)	16 (43%)	1	2	3	10	3
December	18	14	0	0	0	0	0	0	0
Total	372	295	139 (47%)	108 (37%)	14	17	23	62	23

TABLE 2.13

1985 DRIVER FATALITIES' LEVEL OF ALCOHOL CONCENTRATION BY ROAD TYPE

Road Type	Killed	Tested	Drinking (.01 or more)	Drunk (.10 or more)	Blood Alcohol Concentration .01-.04	.05-.09	.10-.14	.15-.24	.25 & Over
Interstate	21	19	9 (47%)	8 (42%)	0	1	1	6	1
Trunk Highway	182	150	58 (39%)	44 (29%)	6	8	6	27	11
County State Aid Highway	114	86	50 (58%)	37 (43%)	6	7	11	19	7
County Road	17	13	8 (62%)	6 (46%)	2	0	2	2	2
Township Road	13	8	5 (63%)	5 (63%)	0	0	0	4	1
Local Street	24	19	9 (47%)	8 (42%)	0	1	3	4	1
Other Road	1	0							
Total	372	295	139 (47%)	108 (37%)	14	17	23	62	23

TABLE 2.14

1985 DRIVER FATALITIES' LEVEL OF ALCOHOL CONCENTRATION BY TIME OF DAY

Time of Day	Killed	Tested	Drinking (.01 or more)	Drunk (.10 or more)	Blood Alcohol Concentration .01-.04	.05-.09	.10-.14	.15-.24	.25 & Over
Midnight-2:59 AM	77	64	60 (94%)	49 (77%)	3	8	10	28	11
3:00 AM-5:59 AM	22	15	13 (87%)	10 (67%)	0	3	0	8	2
6:00 AM-8:59 AM	32	28	6 (21%)	2 (7%)	3	1	1	0	1
9:00 AM-11:59 AM	36	25	2 (8%)	2 (8%)	0	0	0	1	1
Noon-2:59 PM	45	33	4 (12%)	2 (6%)	2	0	1	0	1
3:00 PM-5:59 PM	62	51	13 (25%)	10 (20%)	1	2	1	5	4
6:00 PM-8:59 PM	50	36	11 (31%)	8 (22%)	1	2	2	6	0
9:00 PM-11:59 PM	42	39	26 (67%)	22 (56%)	3	1	8	11	3
Unknown	6	4	4 (100%)	3 (75%)	1	0	0	3	0
Total	372	295	139 (47%)	108 (37%)	14	17	23	62	23

TABLE 2.15

DRIVER FATALITIES' LEVEL OF ALCOHOL CONCENTRATION BY DAY OF WEEK

Day of Week	Killed	Tested	Drinking (.01 or more)	Drunk (.10 or more)	Blood Alcohol Concentration .01-.04	.05-.09	.10-.14	.15-.24	.25 & Over
Sunday	58	47	30 (64%)	21 (45%)	3	6	5	8	8
Monday	45	36	8 (22%)	5 (14%)	2	1	1	3	1
Tuesday	49	34	13 (38%)	12 (35%)	0	1	4	3	5
Wednesday	39	32	17 (53%)	12 (38%)	2	3	1	8	3
Thursday	58	47	17 (36%)	14 (30%)	1	2	3	10	1
Friday	53	39	15 (38%)	13 (33%)	2	0	4	8	1
Saturday	70	60	39 (65%)	31 (52%)	4	4	5	22	4
Total	372	295	139 (47%)	108 (37%)	14	17	23	62	23

FIGURE 2.05

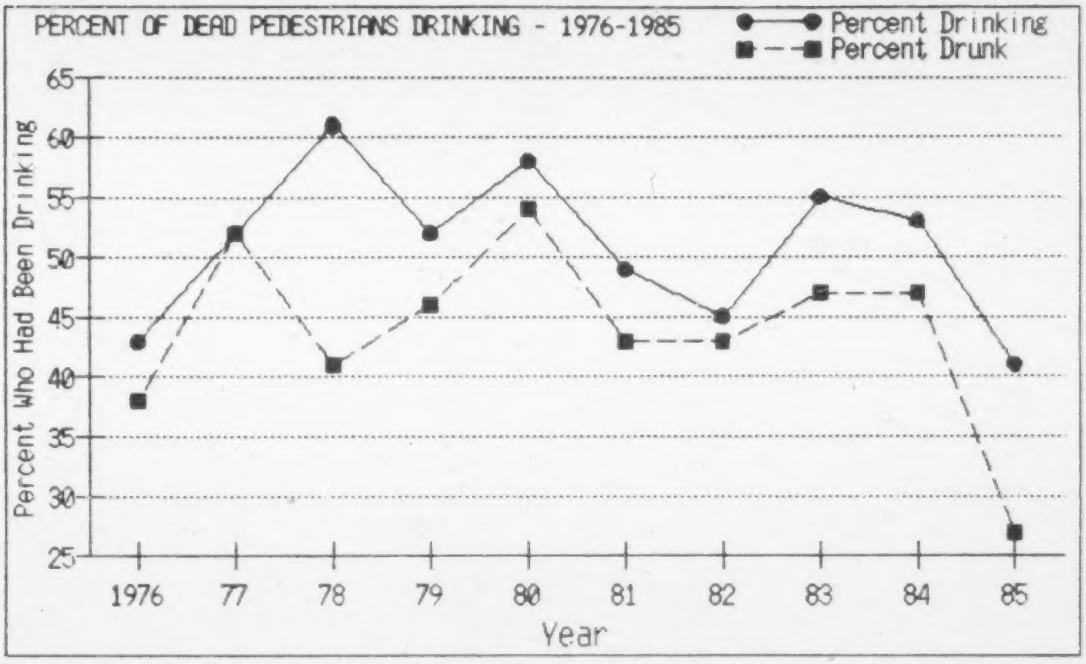


TABLE 2.16

DRINKING PEDESTRIAN FATALITY SUMMARY 1976-1985

	Killed	Tested	Drinking (.01 or more)	Drunk (.10 or more)
1976	120	58	25 (43%)	22 (38%)
1977	140	62	32 (52%)	32 (52%)
1978	115	54	33 (61%)	22 (41%)
1979	117	56	29 (52%)	26 (46%)
1980	114	48	28 (58%)	26 (54%)
1981	100	53	26 (49%)	23 (43%)
1982	76	40	18 (45%)	17 (43%)
1983	62	38	21 (55%)	18 (47%)
1984	55	38	20 (53%)	18 (47%)
1985	65	37	15 (41%)	10 (27%)

TABLE 2.17

1985 PEDESTRIAN FATALITIES' LEVEL OF ALCOHOL CONCENTRATION BY AGE

Age	Killed	Tested	Drinking (.01 or more)	Drunk (.10 or more)	Blood Alcohol Concentration .01-.04	.05-.09	.10-.14	.15-.24	.25 & Over
15 & Below	15	4	1	0		1			
16 - 20	4	3	1	1					1
21 - 25	7	7	6	5	1		2	3	
26 - 30	3	2	0	0					
31 - 35	4	2	1	1					1
36 - 40	2	1	1	0		1			
41 - 45	2	1	1	1				1	
46 - 50	0	0	0	0					
51 - 55	2	1	1	1			1		
56 - 60	2	1	1	0	1				
61 - 65	1	1	0	0					
66 & Above	22	13	1	0	1				
Unknown	1	1	1	1				1	
Total	65	37	15	10	3	2	3	5	2

TABLE 2.18

1985 PEDESTRIAN FATALITIES' LEVEL OF ALCOHOL CONCENTRATION BY TIME OF DAY

Time of Day	Killed	Tested	Drinking (.01 or more)	Drunk (.10 or more)	Blood Alcohol Concentration .01-.04	.05-.09	.10-.14	.15-.24	.25 & Over
12AM-2:59AM	11	8	8	6	1	1	3	2	1
3-5:59 AM	3	3	1	1				1	
6-8:59 AM	1	0	0	0					
9-11:59 AM	6	5	1	0		1			
12PM-2:59PM	9	2	0	0					
3-5:59 PM	12	4	0	0					
6-8:59 PM	11	6	2	1	1				1
9-11:59 PM	11	9	3	2	1			2	
Unknown	1	0	0	0					
Total	65	37	15	10	3	2	3	5	2

Part III

Safety Restraint Information

Safety restraints, which include seat belts and child seats, play a critical role in traffic safety. They are the most effective means by which we can reduce the likelihood of serious injury or death if involved in a motor vehicle accident. The fact that seat belts can reduce injuries is reflected by the injury severity of those people who were safely restrained in 1985. Persons with no visible injury had significantly higher restraint use, 23.8 percent, than these who were killed, 11.1 percent. The chi-square test of statistical significance demonstrates that a strong relationship exists between the amount of restraint use and injury severity. The more severe a person's injury, the less likely that person used a safety restraint.

Effective August 1, 1986, Minnesota will have a seat belt law which requires all front seat occupants and back seat passengers under eleven years old to wear seat belts. The law carries no penalty for non-compliance and without the threat of penalty it is difficult to predict what impact it will have on behavior. Until August 1, 1986, when the new law becomes effective, the only persons required to be restrained are children younger than four years old. First put into effect on January 1, 1982, and amended in 1983, the Child Passenger Protection Act now requires parents and guardians to properly secure their children in federally approved child restraints when transporting them in a motor vehicles. Failure to comply with this law can result in a $25.00 fine.

Safety restraint use data is obtained from two sources. The first and primary source, police accident reports, include restraint use of persons killed or injured in motor vehicle accidents. The second source consists of the observation studies which have been conducted each summer in Minnesota for the past five years. In 1985, 25 sites were selected throughout the state for collection of seat belt and child safety seat use data. Accident reports in 1985 show significant increases in restraint use of persons injured and killed. Besides an obvious explanation for this development - greater numbers of people wearing seat belts - it may also be attributed to more comprehensive reporting of restraint use. In 1984, restraint use was unknown for 52 percent of the people injured or killed. This compares to 35 percent in 1985.

The percentage of motor vehicle occupants killed or injured who were not wearing seat belts in 1985 dropped to the lowest level recorded in recent years. Of those people killed for whom restraint use was known, 89 percent were not wearing seat belts at the time of the crash. Of those people injured for whom restraint use was known, 81 percent were not safely restrained. The 1985 Observation Study shows restraint use at the highest level in the five years since the study began (see Table 3.07). The observed result of 18.5 percent restraint use for all ages reflects almost exactly the figure of 18.9 percent disclosed by accident reports.

Safety restraints and 1985 crashes:

* Fifty-eight percent of the children under age four who were injured and killed were not in safety restraints.

* Children four years old and younger had the highest restraint use at 49.5 percent while 15 to 19 year olds had the lowest recorded use at 9.2 percent.

* The most frequent use of safety restraints occurred from 8 a.m. to 10 a.m. The period of lowest use was midnight to 3:00 a.m.

* Twenty-five percent of the people in accidents on interstates were wearing seat belts--the highest percentage by type of roadway. This compares to only seven percent restraint use on township roads, the lowest percent of use on any type roadway.

NOTE: This section is based only on those people travelling in vehicles for which seat belts are mandatory equipment--passenger cars, trucks, vans, pick-ups, and other similar vehicles.

TABLE 3.01

MOTOR VEHICLE OCCUPANTS KILLED OR INJURED USING SAFETY RESTRAINTS*

	Fatalities		Severe Injuries		Moderate Injuries		Possible Injury	
	Number	Percent	Number	Percent	Number	Percent	Number	Percent
1981	12	4.2	148	6.8	545	8.3	679	11.4
1982	15	6.3	127	7.0	555	9.6	779	13.3
1983	20	6.2	323	12.2	1,061	13.4	1,380	18.1
1984	25	8.2	272	11.0	1,051	14.1	1,483	20.2
1985	39	11.1	383	12.2	1,564	15.4	2,719	23.8

* Percentages based on known and reported use (includes child restraints)

TABLE 3.02

1985 RESTRAINT USE OF CHILDREN INJURED AND KILLED UNDER AGE 4*

	Children Restrained	Total Children	Percent Restrained of Total
Less Than One Year Old			
Fatalities	0	1	0.0
Injuries	57	94	61.0
One Year Old			
Fatalities	1	1	100.0
Injuries	67	154	44.0
Two Years Old			
Fatalities	1	2	50.0
Injuries	88	208	42.0
Three Years Old			
Fatalities	0	2	0.0
Injuries	78	228	34.0
TOTAL			
Fatalities	2	6	33.0%
Injuries	290	684	42.0%

* Includes child restraints and seat belt use.

TABLE 3.03

1985 RESTRAINT USE OF KILLED AND INJURED PERSONS BY TIME OF DAY

Hour Beginning	Restrained	Unrestrained	Percent Restrained (known use)	Unknown	Total
Midnight	66	718	8.4	313	1,097
1:00	97	1,019	8.7	460	1,576
2:00	47	526	8.2	206	779
3:00	23	276	7.7	100	399
4:00	21	159	11.7	90	270
5:00	22	217	9.2	72	311
6:00	86	329	20.7	253	668
7:00	253	858	22.8	699	1,810
8:00	238	719	24.9	553	1,510
9:00	207	663	23.8	538	1,408
10:00	267	765	25.9	600	1,632
11:00	242	886	21.5	691	1,819
Noon	331	1,083	23.4	819	2,233
1:00	254	1,016	20.0	766	2,036
2:00	323	1,205	21.1	885	2,413
3:00	381	1,490	20.4	1,118	2,989
4:00	365	1,543	19.1	1,079	2,987
5:00	402	1,452	21.7	1,077	2,931
6:00	254	1,059	19.3	702	2,015
7:00	246	1,017	19.5	567	1,830
8:00	140	873	13.8	462	1,475
9:00	149	795	15.8	451	1,395
10:00	136	785	14.8	356	1,277
11:00	99	662	13.0	359	1,120
Not Stated	56	259	17.8	398	713
TOTAL	4,705	20,374	18.8%	13,614	38,693

TABLE 3.04

RESTRAINT USE OF KILLED AND INJURED PERSONS IN 1985 BY AGE

Age Group	Restrained	Unrestrained	Percent Restrained (known use)	Unknown	Total
0 - 4	356	363	49.5	231	950
5 - 9	162	556	22.6	242	960
10 - 14	87	726	10.7	295	1,108
15 - 19	448	4,419	9.2	1,999	6,866
20 - 24	561	3,748	13.0	2,281	6,590
25 - 29	598	2,293	20.7	1,729	4,620
30 - 34	478	1,566	23.4	1,317	3,361
35 - 39	443	1,237	26.4	1,014	2,694
40 - 44	286	882	24.5	736	1,904
45 - 49	221	700	24.0	580	1,501
50 - 54	208	612	25.4	494	1,314
55 - 59	191	549	25.8	439	1,179
60 - 64	176	554	24.1	408	1,138
65 - 69	125	429	22.6	292	846
70 - 74	105	369	22.2	241	715
75 & Over	113	572	16.5	323	1,008
Unknown	147	799	15.5	993	1,939
Total	4,705	20,374	18.8%	13,614	38,693

TABLE 3.05

1985 RESTRAINT USE OF PERSONS INJURED AND KILLED BY TYPE OF ROADWAY

Type of Roadway	Restrained	Unrestrained	Percent Restrained (known use)	Unknown	Total
Interstate	425	1,269	25.1	820	2,514
Trunk Highway	1,948	7,774	20.0	4,739	14,461
County State Aid Highway	1,207	5,343	18.4	3,688	10,238
County Road	94	640	12.8	311	1,045
Township Road	54	713	7.0	302	1,069
Local Street	920	4,310	17.6	3,461	8,691
Other Road	57	325	14.9	293	675
Total	4,705	20,374	18.8	13,614	38,693

TABLE 3.06

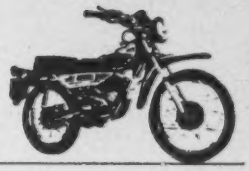
SEAT BELT AND CHILD RESTRAINT USE IN MINNESOTA

People Observed	1981 Restrained Number	1981 Percent	1982 Restrained Number	1982 Percent	1983 Restrained Number	1983 Percent	1984 Restrained Number	1984 Percent	1985 Restrained Number	1985 Percent
Infants; less than one year old	54	51.9	93	65.0	93	54.4	112	70.8	142	75.5
Young Children; at least one and less than four	61	17.4	113	22.4	180	30.6	123	29.3	172	39.0
Older Children; at least four and less than 12	18	3.7	61	7.8	138	13.2	170	16.7	204	17.2
Passengers; 12 or older	101	9.9	162	6.2	281	11.0	407	11.5	429	12.0
Drivers	272	13.2	478	10.1	714	14.0	991	15.1	1,508	19.0

Table 3.06 contains findings from the Minnesota observational studies. For a copy of the complete 1985 report, contact the Minnesota Safety Council.

Part IV

Motorcycle Crashes



After five years of high motorcyclist fatality totals (in 1977 through 1981) fatalities began dropping to earlier levels. In 1985, the 77 fatalities represent an increase of 26 percent over 1984; however, the 1985 total is nine percent lower than the average of the previous five years. Also, the fatality total is 36 percent less than the ten year high of 121 in 1980. Another encouraging development is the decline from 1984 to 1985 in motorcyclist injuries (3 percent) and total accidents (almost 1 percent). They dropped to low levels surpassed by only one other year in the past nine years.

Part of the success in reducing fatalities and injuries may be attributed to the motorcycle safety program begun in 1982. It emphasizes improved training, licensing and testing as well as intensive public information and education for motorcyclists and other motor vehicle drivers. The ratio of licensed operators to registered motorcycles continues to increase as it has since 1975. This indicates that more people who do not own motorcycles are obtaining or renewing endorsements.

Obviously, motorcyclists are more susceptible to injury in crashes than motor vehicle occupants. In 1985, the fatality rate for motorcyclists in crashes was five times greater than the rate for people in crashes of all vehicle types. In past years, head injuries have been the most commonly cited cause of death in motorcycle accidents. Seventy-nine percent of all motorcyclists killed in 1985 were not wearing helmets at the time of their accidents. An observation study on helmet use conducted in the summer of 1985 showed that 53 percent of motorcycle drivers and passengers at 86 sites throughout Minnesota were wearing helmets. This result is similar to the findings of a 1979 Minnesota helmet study which showed a helmet use rate of 55 percent. The 1985 study revealed a significantly higher percentage of motorcyclists wearing helmets at non-metropolitan sites (60 percent) than at metropolitan sites (47 percent).

On May 1, 1968, Minnesota enacted a law requiring all motorcyclists to wear helmets. Less than a decade later, on April 7, 1977, the helmet law was modified so that only persons under age 18 and those operating a motorcycle with a learner's permit are required to wear a helmet. At that time motorcyclist fatalities increased dramatically--from 57 in 1976 to 94 in 1977. In the five years prior to the change in the helmet law, Minnesota averaged 58 motorcyclist fatalities per year. In the five years following the law change, Minnesota averaged 100 fatalities per year. Since 1983, fatalities have averaged 71, a level consistent with the figures before the law was modified.

1985 motorcycle crash features:

* Forty percent of all fatal motorcycle crashes involved another motor vehicle, and 53 percent involved rollovers or collisions with fixed objects. Fifty-one percent of injury crashes involved another motor vehicle, and 36 percent involved rollovers or collisions with fixed objects.

* Fifty-three percent of all fatal motorcycle crashes took place in rural areas with populations of fewer than 1,000 persons.

* Injury crashes also occurred most often in areas with fewer than 1,000 people, followed closely by cities with populations over 100,000. This contrasts with bicycle and pedestrian injury crashes which occurred most often in these largest cities.

* Almost 70 percent of fatal crashes occurred in May through August. Most injury crashes, 92 percent, occurred in April through September, with July showing the largest number (517).

* The highest number of fatal crashes took place between 1:00 and 2:00 a.m. followed by the 4:00 p.m. to 5:00 p.m. period. Saturday had the most crashes (460) followed by Sunday (436).

* Males outnumbered females injured and killed by seven to one. As in many of the past years, the age group with the most fatalities and injuries was 20 to 24 year-olds.

* Seventy-nine percent of the motorcyclists killed were not wearing helmets at the time of their accidents, a much higher figure than the 51 percent in 1984. The greater percentage may be partly attributed to more complete reporting of helmet use (see Table 4.07).

* Indications on 1985 police reports showed that 47 percent of the motorcycle drivers in fatal crashes, and 20 percent in injury crashes, had been drinking or were under the influence of alcohol. In 1984, reports showed 37 percent alcohol involvement for motorcycle drivers in fatal crashes.

* Illegal or unsafe speed accounted for the highest percentage of contributing factors attributed to motorcycle drivers. The next most frequently cited factor was driver inattention or distraction. For motor vehicle drivers, failure to yield right of way, followed by driver inattention were significant factors in crashes with motorcyclists.

TABLE 4.01

MOTORCYCLE CRASH SUMMARY, 1976-1985

	1976	1977	1978	1979	1980	1981	1982	1983	1984	1985
Total Accidents	2,460	2,718	2,827	2,872	3,308	3,063	2,518	2,811	2,768	2,748
Fatal Accidents	61	88	103	95	112	92	72	70	59	75
Personal Injury Accidents	1,862	2,120	2,345	2,391	2,728	2,516	2,115	2,377	2,302	2,238
Persons Killed:										
Motorcyclists	57	94	106	97	121	96	70	73	62	77
Non-Motorcyclists/Unknown	5	0	1	1	1	0	6	0	1	1
Persons Injured:										
Motorcyclists	2,223	2,522	2,860	2,833	3,359	2,874	2,381	2,678	2,590	2,500
Non-Motorcyclists/Unknown	43	42	47	71	34	196	189	191	207	204
Licensed Operators	152,138	172,223	184,545	201,075	222,330	238,926	246,134	252,808	256,836	272,317
Registered Motorcycles	143,237	151,763	151,016	156,552	157,815	166,151	159,345	155,502	153,851	151,449
Rates:										
Fatal Motorcycle Crashes Per 100 Motorcycle Crashes	2.5	3.2	3.6	3.3	3.4	3.0	2.9	2.5	2.1	2.7
Fatal Crashes Per 100 Crashes (All Vehicles)	0.6	0.6	0.7	0.7	0.7	0.7	0.6	0.5	0.5	0.5
Motorcyclist Fatalities Per 10,000 Motorcycle Registrations	4.0	6.2	7.0	6.2	7.7	5.8	4.5	4.7	4.0	5.1
Motorcyclist Injuries Per 10,000 Motorcycle Registrations	155.2	166.2	189.4	181.0	212.8	173.0	149.4	172.2	165.5	165.1
Total Motorcycle Crashes Per 10,000 Motorcycle Registrations	171.7	179.1	187.2	183.5	209.6	184.4	158.0	180.8	179.9	181.4

Helmet Law May 1, 1968

Helmet Law Repeal April 17, 1977

1983 and 1984 injury figures include some all-terrain vehicles. Fatality figures do not.

TABLE 4.02

1985 MOTORCYCLE CRASHES BY ACCIDENT TYPE

Accident Type	Fatal Crashes	Personal Injury Crashes	Property Damage Crashes	Total Crashes
Collision With:				
Other Motor Vehicle	30	1,132	254	1,416
Parked Motor Vehicle	0	45	78	123
Railroad Train	0	0	0	0
Bicyclist	0	19	0	19
Pedestrian	1	24	0	25
Animal	2	69	14	85
Fixed Object	27	259	28	314
Other Object	0	22	3	25
Non-Collision:				
Overturn	13	540	42	595
Fire/Explosion	0	3	1	4
Other/Unknown	2	125	15	142
Total	75	2,238	435	2,748

TABLE 4.03

1985 MOTORCYCLE CRASHES BY CITY POPULATION

Population of City or Township	Fatal Crashes	Personal Injury Crashes	Property Damage Crashes	Total Crashes
100,000 and Over	9	442	110	561
50,000 - 99,999	3	126	19	148
25,000 - 49,999	7	356	62	425
10,000 - 24,999	6	340	64	410
5,000 - 9,999	6	164	36	206
2,500 - 4,999	1	68	15	84
1,000 - 2,499	0	41	8	49
Under 1,000	40	511	63	614
Unknown	3	190	58	251
Total	75	2,238	435	2,748

TABLE 4.04

1985 MOTORCYCLE CRASHES BY MONTH

Month	Fatal Crashes	Personnel Injury Crashes	Property Damage Crashes	Total Crashes
January	0	1	0	1
February	0	4	3	7
March	4	48	13	65
April	6	205	35	246
May	12	366	65	443
June	12	406	74	492
July	14	517	102	633
August	14	338	59	411
September	7	217	48	272
October	4	121	27	152
November	2	15	8	25
December	0	0	1	1
Total	75	2,238	435	2,748

FIGURE 4.01

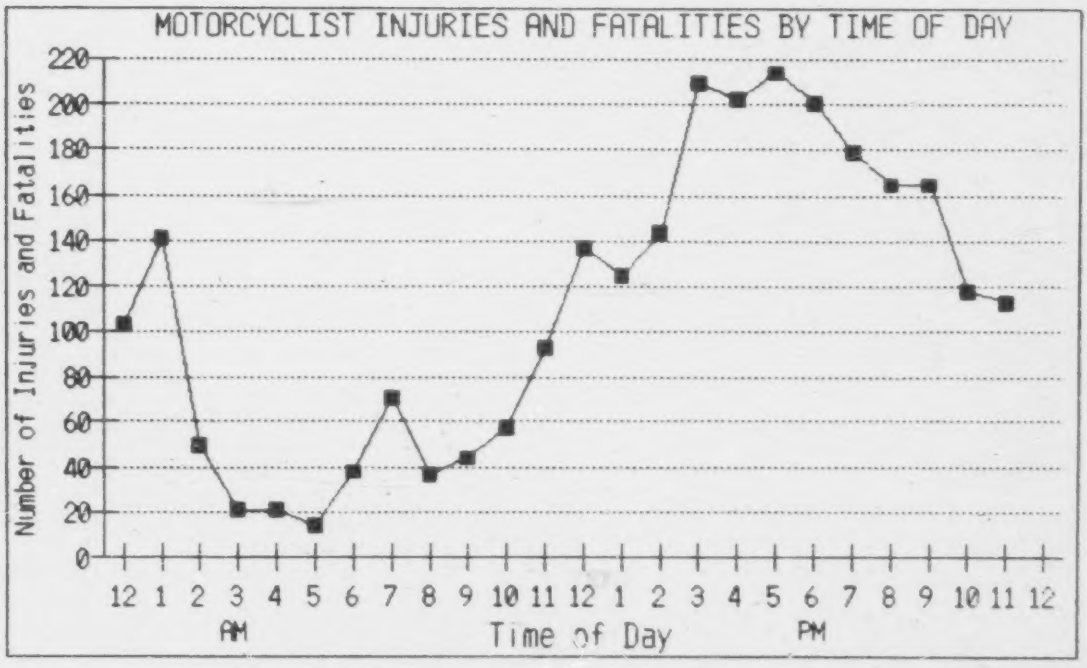


TABLE 4.05

1985 MOTORCYCLE CRASHES BY TIME AND DAY

Hour Beginning	Total Crashes	Fatal Crashes	Sunday		Monday		Tuesday		Wednesday		Thursday		Friday		Saturday	
			All	Fatal	All	Fatal	All	Fatal	All	Fatal	All	Fatal	All	Fatal	All	Fatal
Midnight	103	2	18	1	8	0	9	0	12	0	15	0	20	1	21	0
1:00	141	10	39	4	5	0	9	0	9	1	14	0	15	0	50	5
2:00	50	3	15	1	0	0	6	0	4	0	4	1	6	0	15	1
3:00	21	2	4	0	1	0	2	0	1	1	4	1	3	0	6	0
4:00	21	2	8	1	0	0	0	0	1	0	2	0	1	0	9	1
5:00	14	1	1	0	2	0	1	0	4	0	2	0	1	0	3	1
6:00	38	2	10	1	7	1	7	0	5	0	4	0	3	0	2	0
7:00	71	2	4	0	14	0	13	1	14	1	13	0	11	0	2	0
8:00	37	0	2	0	6	0	4	0	6	0	7	0	6	0	5	0
9:00	44	1	3	0	6	1	8	0	6	0	4	0	9	0	8	0
10:00	57	2	9	0	7	0	4	0	9	0	7	0	8	2	13	0
11:00	93	3	13	0	17	0	12	0	11	0	10	1	9	0	21	2
Noon	137	2	17	1	18	0	22	0	17	0	22	0	18	1	23	0
1:00	125	1	24	1	16	0	14	0	15	0	18	0	17	0	21	0
2:00	144	1	23	1	27	0	13	0	15	0	18	0	26	0	22	0
3:00	210	3	28	1	24	0	28	0	35	0	33	1	30	1	32	0
4:00	202	8	32	2	25	2	27	1	33	0	29	1	41	1	15	1
5:00	214	4	29	1	31	0	18	0	27	0	29	2	46	1	34	0
6:00	201	2	34	0	26	0	25	0	22	0	28	1	28	0	38	1
7:00	179	3	38	1	15	0	22	0	32	0	26	0	23	1	23	1
8:00	165	3	26	0	22	1	27	1	19	0	24	0	22	1	25	0
9:00	165	6	22	1	16	1	28	2	22	0	25	1	29	1	23	0
10:00	118	5	23	0	11	0	6	0	25	2	14	1	21	1	18	1
11:00	113	5	6	0	9	1	11	0	17	0	27	0	24	1	19	3
Not Stated	85	2	8	0	15	0	12	0	9	0	12	0	18	1	12	1
Total	2,748	75	436	17	328	7	328	5	370	5	391	10	435	13	460	18

TABLE 4.06

MOTORCYCLIST INJURIES AND FATALITIES BY AGE AND SEX

Age Group	Killed			Severe Injury			Moderate Injury			Possible Injury		
	Male	Female	Total	Male	Female	Total	Male	Female	Total	Male	Female	Total
0- 4	0	0	0	0	0	0	1	0	1	1	0	1
5- 9	0	0	0	2	00	2	2	1	3	4	1	5
10-14	1	0	1	10	1	11	13	2	15	6	3	9
15-19	12	3	15	142	25	167	212	39	251	60	12	72
20-24	26	1	27	255	26	281	398	44	445	141	20	161
25-29	19	2	21	143	16	159	204	18	222	76	12	88
30-34	7	0	7	78	14	92	96	9	105	46	6	52
35-39	2	2	4	42	3	45	61	10	71	21	2	23
40-44	1	0	1	25	5	30	27	6	33	10	5	15
45-49	0	0	0	8	1	9	18	1	19	7	1	8
50-54	0	0	0	7	0	7	6	4	10	6	0	6
55-59	1	0	1	3	0	3	4	2	6	1	0	1
60-64	0	0	0	3	0	3	5	0	5	0	0	0
65-69	0	0	0	0	0	0	1	0	1	2	0	2
70-74	0	0	0	1	0	1	1	0	1	1	0	1
75 & over	0	0	0	0	0	0	0	0	0	0	0	0
Not Stated	0	0	0	5	6	11	16	8	24	13	9	23
Total	69	8	77	724	97	821	1,065	144	1,212	395	71	467

FIGURE 4.02

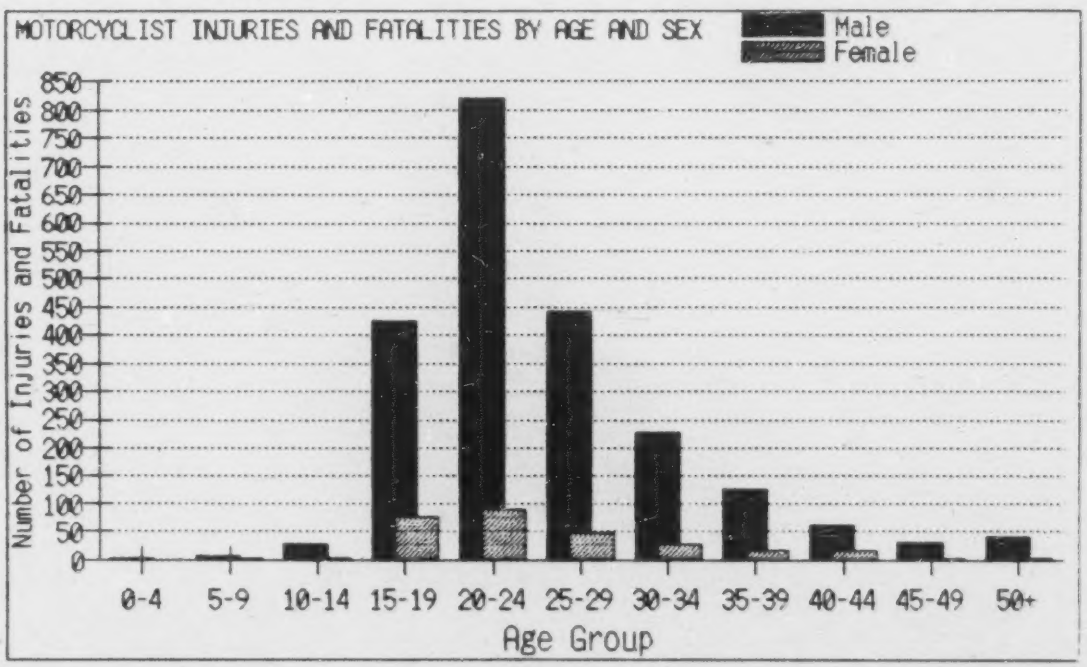


TABLE 4.07

HELMET USE BY MOTORCYCLISTS KILLED IN 1985 CRASHES

Helmet Use	1984 Number	1984 Percent	1985 Number	1985 Percent
Used	19	31.0	16	21.0
Not Used	32	51.0	61	79.0
Unknown	11	18.0	0	0.0
Total	62	100.0	77	100.0

TABLE 4.08

MOTORCYCLE OPERATORS IN 1985 CRASHES BY PHYSICAL CONDITION*

Physical Condition of Driver	In: Fatal Crashes	Severe Injury Crashes	Moderate Injury Crashes	Possible Injury Crashes	Property Damage Crashes	Total Crashes
Normal	17	478	749	313	215	1,772
Under the Influence	14	92	95	21	20	242
Had been Drinking	22	114	114	32	14	296
Had been Using Drugs	0	1	1	0	0	2
Asleep	0	2	0	0	2	4
Fatigued	0	0	2	0	0	2
Other	3	12	7	3	1	26
Unknown	21	90	134	38	203	486
Total	77	789	1,102	407	455	2,830

* Some crashes may have involved more than one motorcycle driver.

TABLE 4.09

CONTRIBUTING FACTORS* IN 1985 MOTORCYCLE CRASHES

Contributing Factors	Attributed to Motor Vehicle Drivers		Attributed to Motorcycle Drivers	
	Number	Percent	Number	Percent
Failure to Yield Right of Way	536	33.8	112	4.2
Illegal/Unsafe Speed	61	3.8	625	23.6
Following Too Closely	49	3.0	98	3.7
Disregard For Traffic Control Device	54	3.4	53	2.0
Driving Left of Roadway Center--Not Passing	15	0.9	37	1.4
Improper Passing/ Overtaking	24	1.5	83	3.1
Improper/Unsafe Lane Use	72	4.5	107	4.0
Improper Parking/ Starting/Stopping	25	1.6	14	0.5
Improper Turn	98	6.2	37	1.4
Unsafe Backing	41	2.6	2	0.1
No/Improper Signal	22	1.4	12	0.5
Impeding Traffic	4	0.3	3	0.1
Driver Inattention/ Distraction	372	23.4	520	19.6
Driver Inexperience	38	2.4	320	12.1
Physical Impairment	35	2.2	308	11.6
Vision Obscured	60	3.8	45	1.7
Defective Equipment	30	1.9	31	1.1
Pedestrian Violation/Error	14	0.9	2	0.1
Other Violation	37	2.4	241	9.2
Total	1,587	100.0	2,650	100.0

* More than one contributing factor may be attributed to a single driver.

Part V

Truck Crashes

This is the first edition of Crash Facts in which truck accidents are examined in a separate section. The added emphasis is at least partly due to recent concern over the 18 percent increase in large truck crashes reported nationwide from 1983 to 1984. This increase followed a relatively constant level of truck accidents during the early 1980's. According to one national study, large trucks are nearly twice as likely as smaller trucks to be involved in crashes, and three times as likely as smaller trucks and passenger cars to be involved in fatal crashes.

The four truck configurations selected for further analysis in this section are "truck or truck tractor," "truck with semi-trailer," "truck with twin trailer," and "truck with other trailer." These categories do not include pickup trucks or vans. They may, however, include other small trucks used for a variety of purposes. Because of problems in categorizing trucks on the accident report form, it was impossible to accurately isolate large trucks from trucks in general. In order to identify specific problem areas in truck crashes, these categories are undergoing a continuing refinement process.

Following are facts concerning 1985 truck crashes in Minnesota:

* Driver inattention was the most frequently cited contributing factor for both truck drivers and other drivers--approximately 24 percent each. Second most frequent for truck drivers was illegal or unsafe speed (11 percent); but for other drivers, failure to yield was second, with 13 percent. Defective brakes were cited seven times more frequently for truck drivers than for other drivers; defective tires ten times as often, and defective lights three times as often. Improper turns were listed twice as often for truck drivers as other drivers, unsafe backing four times as often, and, as might be expected, overweight or oversize vehicles, sixteen times as often.

* Most persons injured or killed in truck crashes were occupants of automobiles (54 percent); however, twenty-nine percent were truck occupants.

* Of all truck drivers, more were in the 21 to 25 age category (16 percent) than in any of the other five-year age categories; however, 26-to-30 year-olds were the largest group of drivers in truck-with-semi-trailer crashes.

* According to accident reports, truck drivers who had been drinking made up 1.7 percent of the truck drivers in crashes, and 2.8 percent of other drivers in truck crashes. However, one-half of a percent of truck drivers were reported asleep, whereas only one-tenth of a percent of other drivers were reported asleep.

* Hazardous material was reportedly carried in 11 of the truck crashes. This represented approximately 0.1 percent of all truck crashes.

* State trunk highways had the most truck crashes (21 percent), and county state-aid streets and highways had the second greatest number (17 percent). However, more fatal crashes occurred on U.S. trunk highways than any other type of roadway, and more severe injury crashes occurred on county state-aid highways.

* More truck crashes happened between noon and 3:00 p.m. than any other three-hour period (21 percent). Nine a.m. to noon was second with 20 percent of the crashes. This compares to the overall motor vehicle crash picture, where the largest number of crashes occurred between 3:00 p.m. and 6:00 p.m.

* Small towns of under 1,000 population were the most common sites for truck crashes, just as they were for all motor vehicle crashes. Twenty-three percent occurred in towns of this size. The second most common sites were large cities of greater than 100,000 population, where 21 percent of truck crashes occurred.

* Almost half (48 percent) of truck drivers were urban residents; 30 percent were rural, and 16 percent were out-of-state residents.

TABLE 5.1

CONTRIBUTING FACTORS IN 1985 TRUCK CRASHES

Contributing Factors	Attributed to Truck Driver	Attributed to Other Driver
Driver Inattention	1,378 (23.5%)	1,026 (23.9%)
Illegal/Unsafe Speed	642 (10.9%)	471 (11.0%)
Failure to Yield	478 (8.1%)	567 (13.2%)
Improper Lane Use	396 (6.7%)	341 (7.9%)
Following Too Closely	294 (5.0%)	208 (4.8%)
Improper Turn	294 (5.0%)	143 (3.3%)
Unsafe Backing	271 (4.6%)	72 (1.7%)
Weather	250 (4.3%)	152 (3.5%)
Vision Obscured	242 (4.1%)	142 (3.3%)
Other	197 (3.4%)	55 (1.3%)
Defective Brakes	184 (3.1%)	26 (0.6%)
Disregard for Traffic Control Device	167 (2.8%)	145 (3.4%)
Physical Impairment	155 (2.6%)	157 (3.7%)
Skidding	150 (2.6%)	115 (2.7%)
Improper Passing	143 (2.4%)	148 (3.4%)
Driver Inexperience	141 (2.4%)	158 (3.7%)
Other Human Factor	111 (1.9%)	75 (1.7%)
Improper Parking	86 (1.5%)	73 (1.7%)
Driving Left of Center	70 (1.2%)	115 (2.7%)
Defective Tire	52 (0.9%)	5 (0.1%)
Defective Lights	43 (0.7%)	14 (0.3%)
Improper or No Signal	38 (0.6%)	34 (0.8%)
Oversize or Overweight	33 (0.6%)	2
Impeding Traffic	27 (0.5%)	21 (0.5%)
Road Defect	25 (0.5%)	14 (0.3%)
Inadequate Glass	1	0
Pedestrian Violation	0	14 (0.3%)
Total*	5,868 (100.0%)	4,293 (100.0%)

* Totals include only those vehicles where contributing factors were indicated. Bicycle and pedestrian factors are included in "Other Driver" category.

TABLE 5.2

PERSONS INJURED OR KILLED IN 1985 TRUCK CRASHES BY VEHICLE OCCUPIED

Vehicle Type	Fatal Injury	Non-Fatal Injury	Total
Automobile	69	1,501	1,570
Automobile with Trailer	0	4	4
Truck or Truck Tractor	5	542	547
Truck with Semi-Trailer	7	272	279
Truck with Twin Trailer	0	1	1
Truck with Other Trailer	2	33	35
Pickup Truck	7	178	185
Van	2	63	65
Motorcycle	1	52	53
Motorscooter/Motor Bike	1	1	2
School Bus	1	70	71
Moped	0	2	2
All Terrain Vehicle	0	1	1
Other Bus	0	5	5
Snowmobile	0	4	4
Farm Equipment	0	5	5
Taxicab	0	2	2
Hit Run Vehicle	0	7	7
Police Vehicle	0	3	3
Fire Dept. Vehicle	0	1	1
Ambulance	0	1	1
Other Public Owned Vehicle	1	12	13
Other Privately Owned Vehicle	0	1	1
Bicyclist	2	16	18
Pedestrian	2	47	49
Other	1	8	9
Total	101	2,832	2,933

TABLE 5.3

TRUCK DRIVERS IN 1985 CRASHES BY AGE

Driver Age	Total	Truck or Truck Tractor	Truck With Semi-Trailer	Truck With Twin Trailer	Truck With Other Trailer
15 & Below	8	5	2	0	1
16 - 20	622	547	46	0	29
21 - 25	1,431	953	403	1	74
26 - 30	1,411	837	504	5	65
31 - 35	1,059	558	449	0	52
36 - 40	852	449	354	5	44
41 - 45	651	316	282	9	44
46 - 50	540	267	247	5	21
51 - 55	418	199	194	4	21
56 - 60	337	181	131	2	23
61 - 65	164	103	49	1	11
66 - 70	75	55	18	0	2
71 - 98	91	82	5	0	4
Not Stated	1,237	851	341	4	41
Total	8,896	5,403	3,025	36	432

TABLE 5.4

DRIVERS IN 1985 TRUCK CRASHES BY PHYSICAL CONDITION*

Physical Condition	Truck Driver	Other Driver
Normal	5,633	4,553
Under the Influence	71	111
Had Been Drinking	80	97
Had Been Using Drugs	3	3
Asleep	50	8
Fatigued	12	6
Ill	8	12
Handicapped	2	7
Other	20	20
Unknown	3,017	2,733
Total	8,896	7,550

* As noted by police officer on accident report.

TABLE 5.5

NUMBER OF TRUCKS IN 1985 TRUCK CRASHES BY ACCIDENT TYPE

Accident Type	Truck or Truck Tractor	Truck With Semi-Trailer	Truck With Twin Trailer	Truck With Other Trailer	Total
Collision With:					
Other Motor Vehicle	3,982	2,076	26	287	6,371
Parked Motor Vehicle	629	241	0	33	903
Railroad Train	8	14	0	1	23
Bicyclist	13	1	0	4	18
Pedestrian	28	8	0	3	39
Animal	62	40	0	1	103
Fixed Object	346	327	4	27	704
Other Object	26	34	0	9	69
Non-Collision:					
Overturn	256	132	2	44	434
Fire Explosion	6	7	0	2	15
Submersion	3	1	0	0	4
Other	44	144	4	21	213
Total	5,403	3,025	36	432	8,896

TABLE 5.6

1985 TRUCK CRASHES BY ROAD CONDITION

Road Surface Condition	Severe Injury Crashes	Moderate Injury Crashes	Minor Injury Crashes	Fatal Crashes	Property Damage Crashes	Total Crashes
Dry	209	434	454	64	3,375	4,536
Wet	52	133	155	9	817	1,166
Snow Slush	21	48	49	5	436	562
Ice or Snow Packed	51	127	164	8	1,318	1,668
Other	9	13	9		53	84
Unknown	1	9	25		422	457
Total	343	764	856	86	6,424	8,473

TABLE 5.7

1985 TRUCK CRASHES BY WEATHER CONDITION

Weather Condition	Severe Injury Crashes	Moderate Injury Crashes	Minor Injury Crashes	Fatal Crashes	Property Damage Crashes	Total Crashes
Clear	184	385	424	54	3,158	4,205
Cloudy	100	201	226	19	1,586	2,132
Rain	20	60	80	5	400	565
Snow	20	71	59	3	576	729
Sleet, Hail, and Freezing Rain	1	5	2	0	40	48
Fog, Smog, or Smoke	8	17	19	2	84	130
Blowing Sand, Dust, or Snow	5	10	12	1	78	106
Severe Cross Winds	1	2	2	1	39	45
Other	0	4	4	1	20	29
Unknown	4	9	28	0	443	484
Total	343	764	856	86	6,424	8,473

TABLE 5.8

1985 TRUCK CRASHES INVOLVING HAZARDOUS MATERIAL

	Severe Injury Crashes	Moderate Injury Crashes	Minor Injury Crashes	Fatal Crashes	Property Damage Crashes	Total Crashes
Hazardous Material Carried	1	2	0	1	7	11
Hazardous Material Not Carried	342	762	856	85	6,417	8,462
Total	343	764	856	86	6,424	8,473

TABLE 5.9

1985 TRUCK CRASHES BY RELATIONSHIP TO INTERSECTION

Relationship to Intersection	Severe Injury Crashes	Moderate Injury Crashes	Minor Injury Crashes	Fatal Crashes	Property Damage Crashes	Total Crashes
Interchange Area	29	71	90	11	511	712
Intersection	132	268	236	26	1,256	1,918
Intersection-Related	25	59	70	5	439	598
Alley, Driveway Access	20	51	51	2	449	573
Non-Junction	113	253	247	41	1,636	2,290
Unknown/Missing	24	62	162	1	2,133	2,382
Total	343	764	856	86	6,424	8,473

TABLE 5.10

1985 TRUCK CRASHES BY TYPE OF ROADWAY

Roadway Type	Severe Injury Crashes	Moderate Injury Crashes	Minor Injury Crashes	Fatal Crashes	Property Damage Crashes	Total Crashes
Interstate	27	93	120	6	858	1,104
US Trunk	75	153	172	33	980	1,413
State Trunk	81	188	231	26	1,292	1,818
County State-Aid	96	170	161	17	1,131	1,575
Municipal State-Aid	24	77	81	0	820	1,002
County Road	8	7	13	2	83	113
Township Road	10	18	16	1	74	119
Municipal Street	15	49	45	1	612	722
National Park	1	0	0	0	1	2
National Forest	0	0	0	0	6	6
State Forest	0	0	0	0	2	2
State Park Road	0	0	1	0	0	1
Frontage Road	0	0	0	0	5	5
Private Road	0	2	2	0	31	35
Other Public Roads	0	0	5	0	51	56
Non-Traffic-Ways	6	7	9	0	478	500
Total	343	764	856	86	6,424	8,473

TABLE 5.11

1985 TRUCK CRASHES BY CITY POPULATION

Population of City or Town	Severe Injury Crashes	Moderate Injury Crashes	Minor Injury Crashes	Fatal Crashes	Property Damage Crashes	Total Crashes
100,000 & Up	55	139	177	1	1,437	1,809
50,000 - 99,999	13	33	43	1	338	428
25,000 - 49,999	43	85	120	6	866	1,120
10,000 - 24,999	48	128	126	4	893	1,199
5,000 - 9,999	23	58	65	6	425	577
2,500 - 4,999	11	27	27	4	239	308
1,000 - 2,499	6	18	17	3	139	183
Under 1,000	126	236	241	59	1279	1,941
Unknown	18	40	40	2	808	908
Total	343	764	856	86	6,424	8,473

TABLE 5.12

1985 TRUCK CRASHES BY TIME OF DAY

Time Period	Severe Injury Crashes	Moderate Injury Crashes	Minor Injury Crashes	Fatal Crashes	Property Damage Crashes	Total Crashes
Midnight - 2:59 AM	26	39	38	11	227	341
3:00 - 5:59 AM	9	28	16	2	123	178
6:00 - 8:59 AM	45	112	121	13	844	1,135
9:00 - 11:59 AM	64	158	163	14	1,325	1,724
Noon - 2:59 PM	73	152	196	15	1,366	1,802
3:00 - 5:59 PM	64	143	192	16	1,315	1,730
6:00 - 8:59 PM	33	70	66	11	553	733
9:00 - 11:59 PM	23	51	45	3	327	449
Unknown	6	11	19	1	344	381
Total	343	764	856	86	6,424	8,473

Part VI

Pedestrian Crashes

Progress in pedestrian safety is evident from the dramatic decrease in pedestrian deaths in the past ten years. Although the 65 pedestrian fatalities in 1985 represent an 18 percent increase from last year, the total is 20 percent lower than the average of the previous five years. Also, the 65 fatalities represent a 54 percent reduction from the 140 fatalities in 1977.

Unlike fatalities, pedestrian injuries have not shown a marked decline in recent years. Although injuries decreased gradually from 1976 to 1983, in the past two years injuries rose to levels not recorded in many years. The 1,837 injuries in 1985 represent a nine percent increase from 1984 and a 14 percent increase over the average of the previous five years. Changes in the number of pedestrian crashes have closely followed changes in the number of injuries.

Obviously, pedestrians as traffic crash victims are especially vulnerable to injury. A comparison of 1985 fatality rates shows 35 fatalities per 1,000 pedestrian crashes versus six fatalities per 1,000 crashes of all types. In other words, a pedestrian is roughly six times as likely to be killed in a crash than are persons involved in all types of traffic accidents. Nonetheless, the 1985 pedestrian fatality rate is a significant improvement over the 1976 rate of 70 deaths per 1,000 pedestrian crashes.

1985 pedestrian crash features:

* Cities with populations greater than 100,000 had 40 percent of all injury crashes while cities under 1,000 people had 30 percent of all fatal crashes. The increase in 1985 fatal crashes occurred mostly in cities with a population of 25,000 to 49,999.

* Although the number of crashes did not vary significantly from month to month, October and January had the highest number of fatal crashes and October and May had the highest number of injury crashes.

* More pedestrian crashes occurred on Friday than any other day of the week, and Wednesday and Thursday had the highest number of fatalities. The largest concentration of crashes occurred between 2:00 p.m. and 7:00 p.m.

* The age group of 75 years and older had the most fatalities while the age groups with the most injuries were 5 to 9 year olds and 20 to 24 year olds.

* Twenty-three percent of the pedestrians injured or killed were attempting to cross a road with no signal or crosswalk, the largest category, and 61 percent of the crashes were those in which pedestrians were struck by vehicles traveling straight along the roadway.

TABLE 6.01

PEDESTRIAN CRASHES, INJURIES, FATALITIES, 1976-1985

	1976	1977	1978	1979	1980	1981	1982	1983	1984	1985
Pedestrian Crashes*	1,723	**	1,731	1,700	1,629	1,648	1,374	1,516	1,690	1,845
Pedestrians Injured	1,726	**	1,723	1,678	1,636	1,658	1,438	1,625	1,682	1,837
Pedestrians Killed	120	140	115	117	114	100	76	62	55	65

*A "Pedestrian Crash" is a crash in which a pedestrian was struck by a motor vehicle. Prior to 1984, it was defined as a crash in which only the first 'object' hit was a pedestrian.

**Pedestrian crash and injury information is not available for 1977.

TABLE 6.02

1985 PEDESTRIAN CRASHES BY MONTH

Month	Fatal Crashes	Injury Crashes	Total Crashes
January	8	145	153
February	5	144	149
March	2	136	138
April	4	147	151
May	2	169	171
June	7	148	155
July	3	122	125
August	7	159	166
September	6	136	142
October	8	171	179
November	6	153	159
December	7	150	157
Total	65	1,780	1,845

TABLE 6.03

AGE AND SEX OF PEDESTRIANS INJURED AND KILLED*

Age Group	Killed			Severe Injury			Moderate Injury			Possible Injury		
	Male	Female	Total	Male	Female	Total	Male	Female	Total	Male	Female	Total
0- 4	1	2	3	25	10	35	28	30	58	20	11	31
5- 9	2	4	6	50	24	74	54	30	84	42	31	73
10-14	1	3	4	26	35	61	30	39	69	32	14	46
15-19	2	4	6	26	32	58	33	39	72	29	26	55
20-24	6	0	6	38	39	77	37	31	68	32	22	54
25-29	2	1	3	27	13	40	36	20	56	28	21	49
30-34	4	1	5	24	17	41	17	25	42	29	14	43
35-39	1	0	1	29	8	37	18	11	29	17	9	26
40-44	2	0	2	19	8	27	16	14	30	15	6	21
45-49	0	1	1	9	10	19	16	10	27	10	5	15
50-54	1	1	2	6	8	14	6	6	12	7	7	14
55-59	2	0	2	14	8	22	7	5	12	9	6	15
60-64	1	0	1	7	7	14	8	8	16	5	5	10
65-69	2	0	2	4	11	15	6	5	11	2	9	11
70-74	1	3	4	10	12	22	10	16	26	3	9	12
75 & over	6	10	16	14	23	37	13	16	29	11	16	27
Not Stated	1	0	1	10	4	14	14	18	32	24	30	55
Total	35	30	65	338	269	607	349	323	673	315	241	557

* If sex is unknown, the columns will not add across.

FIGURE 6.01

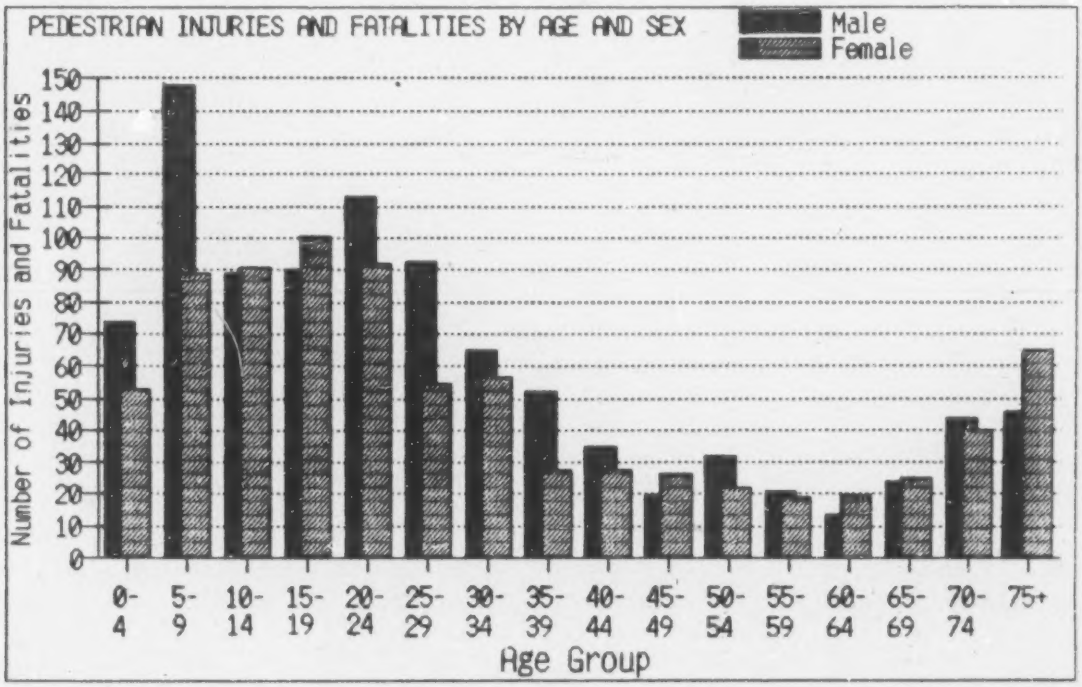


TABLE 6.04

1985 PEDESTRIAN CRASHES BY CITY POPULATION

Population of City or Township	Fatal Crashes	Personal Injury Crashes	Total Crashes
100,000 and Up	12	713	725
50,000 - 99,999	4	88	92
25,000 - 49,999	14	194	208
10,000 - 24,999	7	212	219
5,000 - 9,999	3	79	82
2,500 - 4,999	2	42	44
1,000 - 2,499	3	23	26
Under 1,000	19	96	115
Unknown	1	333	334
Total	65	1,780	1,845

TABLE 6.05

VEHICLE MOVEMENT IN 1985 PEDESTRIAN CRASHES

Vehicle Movement	Fatal Crashes	Personal Injury Crashes	Total Crashes
Vehicle Going Straight	46	1,086	1,132
Vehicle Turning Left	4	157	161
Vehicle Turning Right	1	95	96
Vehicle Backing	0	105	105
All Others	10	324	334
Not Stated	4	13	17
Total	65	1,780	1,845

TABLE 6.06

PRIOR ACTION OF PEDESTRIANS KILLED AND INJURED IN 1985

Action	Number Killed	Number Injured
Crossing With Signal	4	261
Crossing Against Signal	3	94
Crossing In Crosswalk No Signal	2	89
Crossing No Crosswalk No Signal	23	416
Walking In Road With Traffic	7	93
Walking In Road Against Traffic	1	71
Standing In Road	5	101
Emerging From Front/Behind Parked Car	2	136
Child Getting On/Off School Bus	1	3
Getting On/Off Vehicle	1	20
Pushing/Working On Vehicle	0	27
Working In Road	0	16
Playing In Road	0	35
Not In Road	1	67
Other Pedestrian Action	15	405
Unknown	0	3
Total	65	1,837

FIGURE 6.02

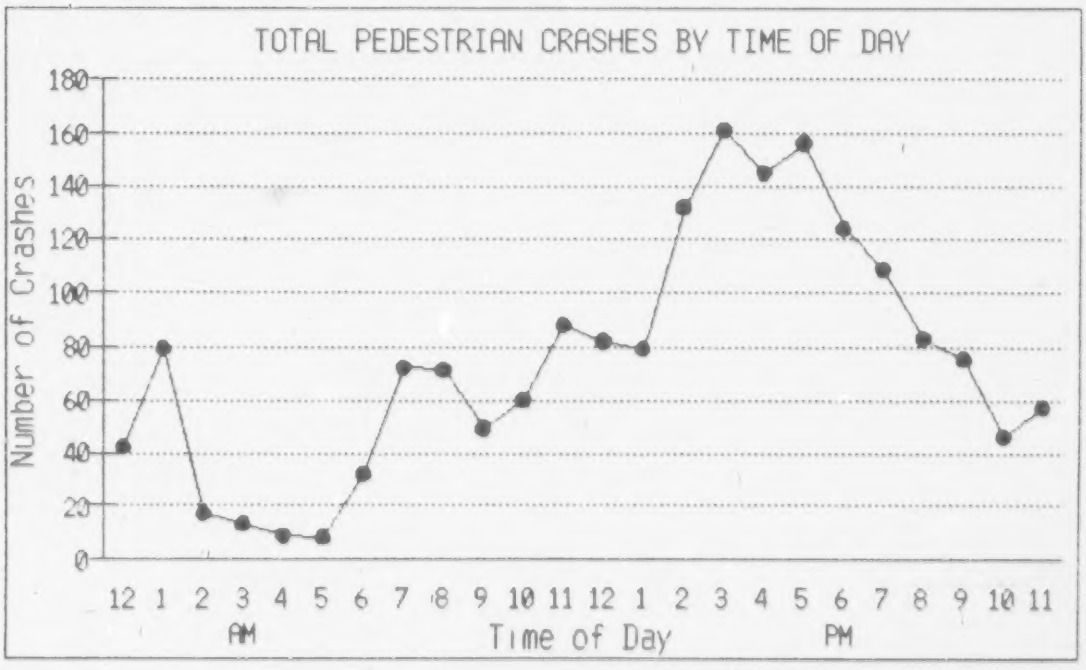


TABLE 6.07

1985 PEDESTRIAN CRASHES BY TIME AND DAY

Hour Beginning	Total Crashes	Fatal Crashes	Sunday		Monday		Tuesday		Wednesday		Thursday		Friday		Saturday	
			All	Fatal	All	Fatal	All	Fatal	All	Fatal	All	Fatal	All	Fatal	All	Fatal
Midnight	42	4	11	0	5	1	3	0	5	1	3	2	3	0	12	0
1:00 am	79	3	26	1	2	0	10	0	3	0	10	1	8	0	20	1
2:00 am	17	1	4	0	1	0	2	1	2	0	2	0	1	0	5	0
3:00 am	13	2	2	1	0	0	0	0	2	0	1	0	1	0	7	1
4:00 am	9	1	1	0	0	0	4	0	0	0	1	1	1	0	2	0
5:00 am	8	0	0	0	1	0	2	0	0	0	1	0	1	0	3	0
6:00 am	32	0	0	0	8	0	3	0	3	0	7	0	9	0	2	0
7:00 am	72	0	1	0	8	0	16	0	15	0	12	0	19	0	1	0
8:00 am	71	1	1	0	11	0	15	1	14	0	11	0	16	0	3	0
9:00 am	49	1	4	0	8	0	6	0	8	1	2	0	15	0	6	0
10:00 am	60	1	8	0	9	1	9	0	8	0	11	0	7	0	8	0
11:00 am	88	3	10	1	17	1	14	0	11	0	11	0	8	1	17	0
Noon	82	5	8	0	12	1	14	0	15	4	12	0	13	0	8	0
1:00 pm	79	0	5	0	8	0	15	0	13	0	12	0	8	0	18	0
2:00 pm	132	4	16	0	31	1	20	1	12	0	24	0	19	2	10	0
3:00 pm	161	5	9	0	24	0	31	2	24	2	28	0	28	1	17	0
4:00 pm	145	2	13	1	32	0	21	1	20	0	23	0	25	0	11	0
5:00 pm	156	5	8	0	28	0	20	1	21	1	24	2	37	0	18	1
6:00 pm	124	5	18	1	18	0	15	0	19	2	18	1	15	0	21	1
7:00 pm	110	5	12	0	22	0	16	0	19	0	11	1	18	1	12	3
8:00 pm	83	3	7	1	8	1	9	0	15	1	12	0	17	0	15	0
9:00 pm	75	5	7	1	11	0	9	0	12	0	13	2	13	1	10	1
10:00 pm	46	4	6	1	3	0	6	0	2	0	10	0	8	2	11	1
11:00 pm	57	3	4	0	5	1	4	0	5	0	10	1	15	1	14	0
Unknown	55	2	4	1	11	1	7	0	6	0	13	0	10	0	4	0
Total	1,845	65	185	9	283	8	271	7	254	12	282	11	315	9	255	9

Part VII

Bicycle Crashes

Despite some fluctuations, bicyclist fatalities in collisions with motor vehicles have decreased significantly from a high of 24 in 1977 to a low of ten in 1985. This record low (also reached in 1981) represents a 33 percent decline from the total of 15 in 1984, and a 29 percent decline from the 14 fatality average of the previous five years.

Although fatalities dropped in 1985, total crashes (1,375) and injuries (1,342) increased by approximately seven percent each. This is the highest level recorded in the past ten years. From the available data, it is not possible to determine whether this rise is due to an increase in bicycle riding, an increase in hazards facing bicyclists, or more comprehensive reporting of bicycle accidents. Bicycle accident reporting generally receives lower priority than other types of traffic accidents. More recently, some effort has been made to correct this problem.

* As expected, fatal bike crashes in 1985 were confined to the months with the most favorable riding weather, May through October. Seventy-two percent of all injury crashes occurred in May through August. Since most bicycle crashes result in injury, very few property damage crashes were recorded.

* Unlike many other kinds of accidents, most bicycle accidents happened during the week rather than on weekends. Bike crashes most often occurred on Fridays between 3 p.m. and 5 p.m.

* As in past years, the majority of bicyclists killed or injured were males. Ten to 14 year-olds remained the age group with most injuries, while 20 to 29 year-olds comprised the age group with the most fatalities. In contrast to 1984, significantly fewer fatalities occurred among the young (less than 19 years old).

* Forty-two percent of the bicyclists injured were riding with the flow of traffic at the time of the accident. Another large fraction, 25 percent, were attempting to ride across a road. This prior bicyclist action was responsible for more fatalities than any other.

* Urbanized areas had the most injury crashes while rural areas had the most fatal crashes. Fifty percent of all fatal crashes occurred in rural areas with populations less than 1,000. This is to be expected, because of higher speeds in rural areas and increased severity when crashes do occur.

TABLE 7.01

BICYCLE-INVOLVED CRASHES, INJURIES, FATALITIES, 1976-1985

	1976	1977	1978	1979	1980	1981	1982	1983	1984	1985
Bicycle Crashes*	1,217	**	1,154	1,067	1,276	1,255	1,130	1,220	1,282	1,375
Bicyclists Injured	1,114	**	1,105	993	1,295	1,213	1,105	1,194	1,258	1,342
Bicyclists Killed	21	24	23	14	19	10	12	14	15	10

* A "Bicycle Crash" is an accident in which a bicycle is struck by a motor vehicle. Prior to 1984, it was defined as a crash in which only the first 'object' hit was a bicyclist.

** Bicyclist injury information is not available for 1977.

TABLE 7.02

1985 BICYCLE CRASHES BY MONTH

Month	Fatal Crashes	Injury Crashes	Property Damage Crashes	All Crashes
January	0	1	0	1
February	0	9	1	10
March	0	34	0	34
April	0	130	0	130
May	1	194	6	201
June	2	241	4	247
July	1	280	1	282
August	3	244	11	258
September	1	103	3	107
October	2	71	3	76
November	0	27	1	28
December	0	1	0	1
Total	10	1,335	30	1,375

TABLE 7.03

1985 BICYCLE CRASHES BY TIME AND DAY

Hour Beginning	Total	Sunday	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday
Midnight	10	5	1	0	0	2	1	1
1:00 AM	6	1	0	0	1	0	2	2
2:00 AM	1	1	0	0	0	0	0	0
3:00 AM	3	0	0	0	0	0	2	1
4:00 AM	2	0	0	0	0	0	0	2
5:00 AM	3	2	1	0	0	0	0	0
6:00 AM	12	0	4	2	0	3	3	0
7:00 AM	48	1	4	13	10	8	10	2
8:00 AM	32	1	6	6	4	6	5	4
9:00 AM	27	3	5	5	5	3	2	4
10:00 AM	35	1	7	6	4	6	5	6
11:00 AM	62	7	5	6	12	11	14	7
Noon	76	16	8	9	5	10	16	12
1:00 PM	91	9	12	11	16	12	20	11
2:00 PM	76	13	10	9	8	11	13	12
3:00 PM	162	9	20	34	31	21	34	13
4:00 PM	158	9	26	18	35	27	31	12
5:00 PM	161	13	26	22	27	22	39	12
6:00 PM	107	14	14	23	21	9	18	8
7:00 PM	105	13	14	12	14	22	20	10
8:00 PM	74	6	10	11	12	14	9	12
9:00 PM	53	2	7	11	12	8	7	6
10:00 PM	26	3	1	4	5	3	7	3
11:00 PM	14	3	1	1	2	1	3	3
Unknown	31	2	5	5	4	5	7	3
Total	1,375	134	187	208	228	204	268	146

FIGURE 7.01

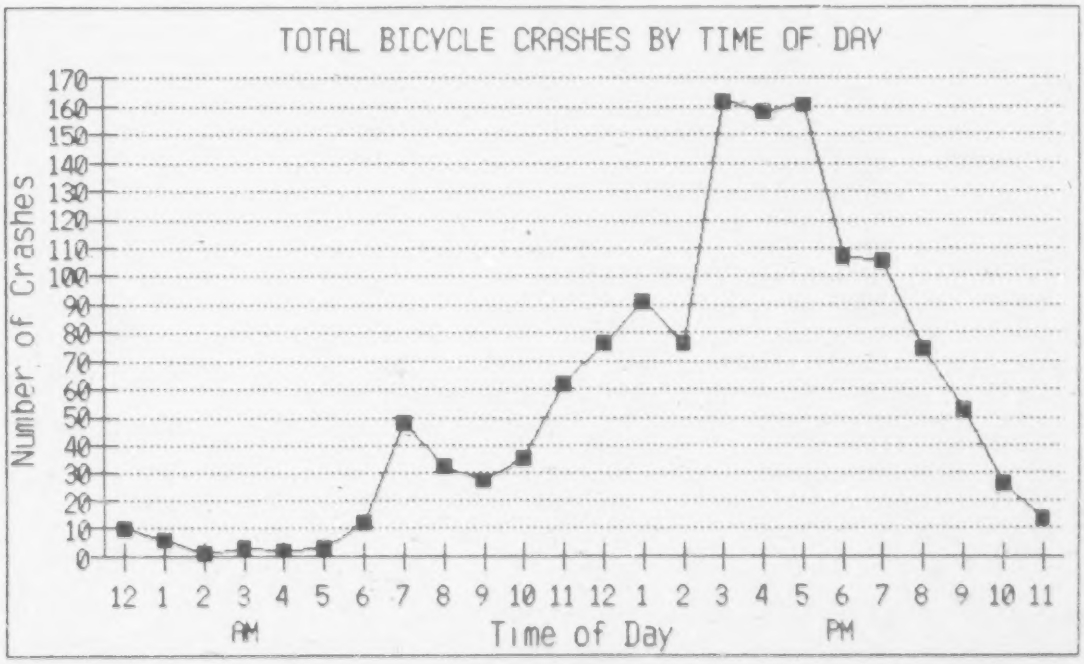


TABLE 7.04

AGE AND SEX OF BICYCLISTS INJURED AND KILLED

Age Group	Killed			Severe Injury			Moderate Injury			Possible Injury		
	Male	Female	Total	Male	Female	Total	Male	Female	Total	Male	Female	Total
0- 4	1	0	1	5	1	6	5	3	8	3	2	5
5- 9	1	0	1	35	10	45	83	27	110	57	14	71
10-14	1	0	1	52	16	68	152	70	222	75	29	104
15-19	1	0	1	35	12	47	95	42	137	63	10	73
20-24	2	0	2	27	9	36	52	25	77	21	17	38
25-29	1	1	2	13	8	21	47	12	59	14	12	26
30-34	1	0	1	8	4	12	23	8	31	17	2	19
35-39	0	0	0	2	4	6	11	8	19	6	2	8
40-44	0	0	0	2	6	8	6	3	9	3	1	4
45-49	0	0	0	1	0	1	3	0	3	1	0	1
50-54	0	0	0	2	1	3	2	2	4	0	0	0
55-59	0	0	0	1	0	1	4	2	6	1	0	1
60-64	0	0	0	1	0	1	2	0	2	0	1	1
65-69	0	0	0	0	0	0	4	0	4	1	0	1
70-74	0	0	0	0	1	1	2	1	3	0	0	0
75 & over	1	0	1	0	0	0	0	0	0	0	0	0
Not Stated	0	0	0	4	0	4	11	1	12	16	8	24
Total	9	1	10	188	72	260	502	204	706	278	98	376

FIGURE 7.02

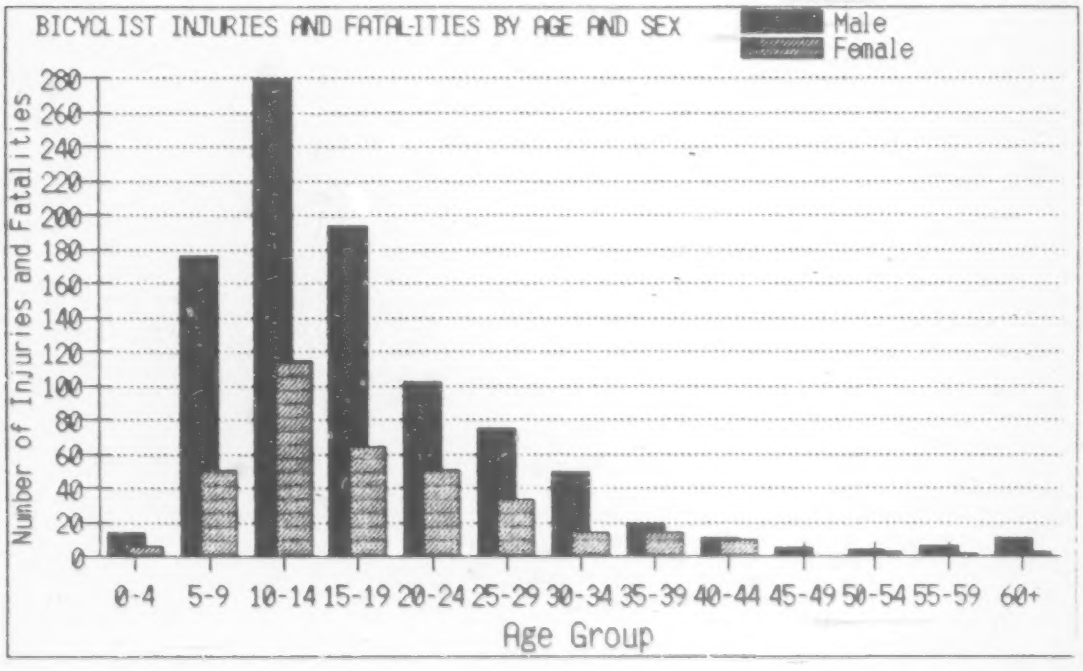


TABLE 7.05

CONTRIBUTING FACTORS IN 1985 BICYCLE CRASHES

Contributing Factors	Attributed to Motor Vehicle Drivers		Attributed to Bicycle Drivers	
	Number	Percent	Number	Percent
Driver Inattention/ Distraction	340	33.7	370	27.0
Failure to Yield Right of Way	264	26.2	232	17.0
Vision Obscured	115	11.4	53	3.9
Illegal/Unsafe Speed	36	3.6	44	3.2
Disregard For Traffic Control Device	35	3.5	122	8.9
Improper Passing/ Overtaking	33	3.3	13	1.0
Improper Turn	32	3.2	47	3.4
Driver Inexperience	24	2.3	106	7.8
Improper/Unsafe Lane Use	22	2.2	120	8.8
Physical Impairment	16	1.6	11	.8
Unsafe Backing	14	1.4	0	0.0
Following Too Closely	10	1.0	10	.7
Improper Parking/ Starting/Stopping	10	1.0	11	.8
Driving Left of Roadway Center--Not Passing	7	.7	45	3.1
No/Improper Signal	7	.7	8	.6
Defective Equipment	4	.4	46	3.4
Impeding Traffic	1	.1	5	.4
Pedestrian Violation/ Error	0	0.0	53	3.9
Other Violation	38	3.7	73	5.3
Total	1,008	100.0	1,367	100.0

* More than one contributing factor may be attributed to a driver.

TABLE 7.06

PRIOR ACTION OF BICYCLE DRIVERS INVOLVED IN 1985 CRASHES

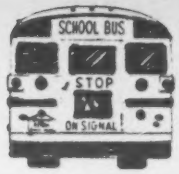
Action In:	Fatal Crashes	Injury Crashes	Property Damage Crashes	All* Crashes
Riding With Traffic	2	570	9	581
Riding Against Traffic	2	106	1	109
Making Left Turn	0	85	2	87
Making Right Turn	1	21	2	24
Making U Turn	0	5	0	5
Riding Across Road	4	340	8	352
Slowing, Starting, Stopping	0	19	0	19
Other/Unknown	2	206	8	216
Total	11	1,352	30	1,393

* The total number of bicycle driver actions exceeds the number of bicycle crashes because more than one bicycle may be involved in a crash.

TABLE 7.07

1985 BICYCLE CRASHES BY CITY POPULATION

Population City or Township	Fatal Crashes	Severe Injury Crashes	Moderate Injury Crashes	Possible Injury Crashes	Property Damage Crashes	All Crashes
100,000 and Over	0	93	218	142	13	466
50,000 - 99,999	0	15	39	17	0	71
25,000 - 49,999	1	40	137	57	2	237
10,000 - 24,999	1	51	127	59	7	245
5,000 - 9,999	0	12	51	30	1	94
2,500 - 4,999	1	8	18	10	1	38
1,000 - 2,499	1	5	9	7	0	22
Under 1,000	5	19	37	13	2	76
Unknown	1	20	65	36	4	126
Total	10	263	701	371	30	1,375



Part VIII

School Bus Crashes

Total school crashes rose in 1985 for the first time in three years. (See Table 8.01) They were up seven percent over 1984, and four percent over the previous three-year average. Most of the increase showed up in property damage crashes.

Fatal school bus crashes have remained very low in Minnesota during the past ten years, with a high of nine in 1976, and a low of one in 1980. In 1985, there were four fatal crashes. Of the four fatalities in those crashes, one occurred on the school bus (the first fatality of this type since 1979) one was a pedestrian who had just exited the school bus, and two were occupants of other vehicles which had collided with a school bus.

While 1985 injury crashes were the highest in ten years, the increase over 1984 was exclusively in minor injury crashes. Serious injury crashes decreased 38 percent, and moderate injury crashes remained exactly the same. Almost half of all injuries sustained in school bus crashes occurred within the school bus. About the same number occurred in another vehicle, and three percent were pedestrian injuries.

* Five-to-nine-year-olds represented the largest age group of those injured on the school bus, followed closely by 10-to-14-year-olds. Of those injured in other vehicles that collided with a school bus, the largest age group was 20-to-24-year-olds.

* As expected, the greatest number of school bus crashes occurred during the time period before and after school -- thirty-five percent occurred between 6:00 am and 9:00 am; and 28 percent occurred between 3:00 pm and 6:00 pm.

* Forty-six percent of school bus crashes occurred where no traffic control device was present. However, where such a device did exist, it was most frequently a stop sign.

* The most frequently cited contributing factor in school bus crashes was driver inattention on the part of the school bus operator and also on the part of the other vehicle driver. Second most frequently cited factor for school bus operators was failure to yield right of way, and for other drivers, illegal or unsafe speed.

TABLE 8.01

SCHOOL BUS CRASHES, 1976 - 1985

	1976	1977	1978	1979	1980	1981	1982	1983	1984	1985
Total Crashes	597	*	698	852	672	681	729	687	675	723
Injury Crashes	118	*	166	184	171	155	160	161	176	191
Fatal Crashes	9	*	2	6	1	2	2	7	3	4
Injuries	*	*	*	*	*	*	282	321	340	366
Fatalities	13	3	2	6	1	2	2	8	3	4
School Buses Involved in Crashes	599	724	708	866	678	692	737	694	686	729

* Not Available.

TABLE 8.02

AGE AND SEX OF PERSONS KILLED & INJURED IN 1985 SCHOOL BUS CRASHES

Age	Total	In Bus	Pedestrian	In Other Vehicle	Male	Female
0- 4	7	0	1	6	6	1
5- 9	62	53	3*	6	27	35
10-14	62	50	3	9	28	34
15-19	37	12*	0	25	14	23
20-24	27	1	0	26	17	10
25-29	21	1	0	20	12	9
30-34	23	5	1	17*	14	9
35-39	24	7	0	17	7	17
40-44	11	2	0	9	4	7
45-54	22	5	0	17*	6	16
55-64	14	6	0	8	9	5
65 & Over	14	2	1	11	5	9
Unknown	46	34	2	10	18	28
Total	370	178	11	181	167	203

* Each category includes both injuries and fatalities. One fatality is included in each of the categories marked with an asterisk.

TABLE 8.03

1985 SCHOOL BUS CRASHES BY ACCIDENT TYPE

Accident Type	Fatal Crashes	Personal Injury Crashes	Property Damage Crashes	Total Crashes
Collision With:				
Other Motor Vehicle	3	163	452	618
Parked Motor Vehicle	0	6	62	68
Bicyclist	0	6	0	6
Pedestrian	1	9	0	10
Animal	0	0	1	1
Fixed Object	0	3	9	12
Other Object	0	0	1	1
Noncollision:				
Overturn	0	2	3	5
Other	0	2	0	2
Total	4	191	528	723

TABLE 8.04

1985 SCHOOL BUS CRASHES BY TIME OF DAY

Time of Day	Fatal Crashes	Personal Injury Crashes	Property Damage Crashes	Total Crashes
Midnight - 2:59 AM	0	2	3	5
3:00 AM - 5:59 AM	0	0	2	2
6:00 AM - 8:59 AM	2	62	189	253
9:00 AM - 11:59 AM	0	23	65	88
Noon - 2:59 PM	0	41	82	123
3:00 PM - 5:59 PM	2	55	147	204
6:00 PM - 8:59 PM	0	4	10	14
9:00 PM - 11:59 PM	0	1	11	12
Unknown	0	3	19	22
Total	4	191	528	723

TABLE 8.05

1985 SCHOOL BUS CRASHES BY MONTH

Month	Fatal Crashes	Personal Injury Crashes	Property Damage Crashes	Total Crashes
January	0	32	67	99
February	1	15	73	89
March	1	22	48	71
April	1	16	31	48
May	0	18	37	55
June	0	4	8	12
July	0	5	7	12
August	0	2	7	9
September	0	20	54	74
October	1	14	41	56
November	0	20	53	73
December	0	23	102	125
Total	4	191	528	723

TABLE 8.06

1985 SCHOOL BUS CRASHES BY TRAFFIC CONTROL DEVICE

Traffic Control Device	Fatal Crashes	Severe Injury Crashes	Moderate Injury Crashes	Minor Injury Crashes	Property Damage Crashes	Total Crashes
None	2	6	26	46	250	330
Traffic Signal	0	5	13	21	66	105
Overhead Flashers	0	0	1	0	0	1
Stop Sign - All Approaches	0	1	0	2	20	23
Other Stop Sign	2	7	20	23	110	162
Yield Sign	0	0	2	1	17	20
Flagman, Officer, or School Patrol	0	0	0	0	3	3
School Bus Stop Arm	0	2	2	3	14	21
School Zone Sign	0	0	0	0	1	1
RR Xing Device	0	0	1	1	5	7
No Passing Zone	0	0	0	0	1	1
Other	0	0	1	2	2	5
Unknown	0	0	0	5	39	44
Total	4	21	66	104	528	723

TABLE 8.07

CONTRIBUTING FACTORS IN 1985 SCHOOL BUS CRASHES

	School Bus	Other Vehicle
Driver Inattention	118 (30%)	129 (23%)
Failure to Yield Right of Way	52 (13%)	75 (14%)
Illegal or Unsafe Speed	33 (8%)	77 (14%)
Unsafe Backing	32 (8%)	9 (2%)
Vision Obscured	24 (6%)	21 (4%)
Following Too Closely	21 (5%)	27 (5%)
Improper Turn	17 (4%)	19 (3%)
Skidding	16 (4%)	35 (6%)
Driver Inexperience	14 (4%)	32 (6%)
Improper Lane Use	12 (3%)	16 (3%)
Disregard for Traffic Control Device	10 (3%)	32 (6%)
Left of Center	9 (2%)	9 (2%)
Improper Parking	7 (2%)	4 (0.1%)
Weather	7 (2%)	21 (4%)
Impeding Traffic	6 (2%)	3 (0.5%)
Road Defect	6 (2%)	7 (1%)
Other Human Factor	5 (1%)	4 (0.7%)
Other	3 (0.8%)	2 (0.4%)
Defective Brakes	1 (0.3%)	5 (0.9%)
Improper or No Signal	1 (0.3%)	3 (0.5%)
Defective Lights	0	1 (0.2%)
Defective Tire	0	1 (0.2%)
Improper Passing	0	6 (1%)
Pedestrian Violation	0	7 (1%)
Physical Impairment	0	6 (1%)
Total*	394 (100%)	551 (100%)

* Totals include only those vehicles where a specific contributing factor was indicated.

Part IX

Motor Vehicle/Train Crashes

In 1985, total motor vehicle/train crashes continued a general downward trend. The 134 crashes in 1985 were an all-time low, a reduction of ten percent over 1984, and a 30 percent decrease over the previous five-year average.

For a number of years, signals and/or gates have been installed at railroad crossings, and total railroad crossings have decreased. This accounts for a substantial increase in the percent of signalized crossings -- from 8.3 percent in 1970 to 22.3 percent in 1985 -- and probably, at least in part, for the substantial decrease in motor vehicle/train accidents in recent years. Depicting this decrease is the ratio of crashes to crossings, which dropped from 1 in 28 in 1970 to 1 in 45 in 1985. The decrease in accidents has not been a result of fewer train miles traveled, as might have been expected. Train traffic has decreased only moderately since 1970, while the ratio of crashes to train miles traveled has been reduced significantly.[1]

The figure of 13 motor vehicle/train crash fatalities in 1985 compares to the 1984 figure of 11 and the previous five-year average which was also 13. Total fatalities have remained at fifteen or fewer since 1980. For the ten years prior to that, the average number of fatalities was 32. 1970 held the record high of 54 fatalities, and 1982 held the record low of seven fatalities.

The likelihood of death or injury in a motor vehicle/train accident is much greater than in a collision between two motor vehicles. Injuries and injury crashes both increased over 1984, but remained about the same as the previous three-year averages. Property damage crashes decreased by 27 percent over 1984, and by 47 percent over the previous five-year average. These changes caused the fatality-to-crash ratio in motor vehicle/train accidents to increase from one fatality in 14 crashes in 1984 to one fatality in ten crashes in 1985, and the injury-to-crash ratio to increase from one injury in two crashes in 1984 to one injury in 1.5 crashes in 1985. These ratios compare with the total motor vehicle fatality to crash ratio in 1985 of 1 fatality in 177 crashes, and one injury in every 2.4 crashes.

* The age group with the most injuries sustained was 20-to-39 year-olds (40 percent of the injuries), most of whom were the drivers of the motor vehicles.

* As was the case in 1984, driver inattention was the most frequently cited contributing factor in 1985, representing 26 percent of the factors cited. Disregard for traffic control devices was the second most frequently cited factor, with 21 percent of the total.

* The traffic control device which was present most frequently in motor vehice/train crashes was the standard railroad sign without flashing lights, crossing gate, or stop sign. This category was coded in 31 percent of the crashes. Second most frequently cited contributing factor was railroad flashing lights, which was present in one-fourth of the crashes.

[1] Motor Vehicle-Train Crash Data Analysis - 1984, Office of Traffic Safety, Minnesota Department of Public Safety

TABLE 9.01

MOTOR VEHICLE/TRAIN CRASHES, 1980 - 1985

	1980	1981	1982	1983	1984	1985
Total Crashes	271	192	164	174	149	134
Fatal Crashes	12	13	5	11	7	8
Property Damage Crashes	204	124	86	94	86	63
Fatalities	15	15	7	15	11	13
Injuries	152	102	92	85	73	87

TABLE 9.02

AGE OF PERSONS KILLED AND INJURED IN 1985
MOTOR VEHICLE/TRAIN CRASHES

Age Group	Fatalities	Severe Injuries	Moderate Injuries	Minor Injuries	Total Injuries
0- 9	2	1	3	0	4
10-19	0	6	5	2	13
20-29	2	5	4	8	17
30-39	2	6	5	7	18
40-49	1	1	4	4	9
50-59	2	0	6	2	8
60-69	2	2	4	1	7
70 & Over	2	1	2	3	6
Not Stated	0	1	3	1	5
Total	13	23	36	28	87

TABLE 9.03

1985 MOTOR VEHICLE/TRAIN CRASHES, BY MONTH

Month	Fatal Crashes	Injury Crashes	Property Damage Crashes	Total Crashes
January	2	5	14	21
February	0	6	4	10
March	0	6	5	11
April	0	3	2	5
May	0	1	4	5
June	1	8	5	14
July	0	7	3	10
August	0	4	1	5
September	0	4	2	6
October	1	7	7	15
November	3	5	7	15
December	1	7	9	17
Total	8	63	63	134

TABLE 9.04

1985 MOTOR VEHICLE/TRAIN CRASHES BY TIME AND DAY

	Sunday	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday	Total
Midnight- 2:59 AM	1	1	0	1	0	0	3	6
3:00- 5:59 AM	0	0	0	1	0	1	2	4
6:00- 8:59 AM	1	2	3	4	7	2	1	20
9:00-11:59 AM	0	5	7	2	1	3	2	20
Noon- 2:59 PM	3	3	5	6	1	10	4	32
3:00- 5:59 PM	2	6	2	5	0	4	1	20
6:00- 8:59 PM	1	3	1	3	5	1	3	17
9:00-11:59 PM	5	1	1	3	0	2	0	12
Unknown	0	0	0	2	1	0	0	3
Total	13	21	19	27	15	23	16	134

TABLE 9.05

CONTRIBUTING FACTORS IN 1985 MOTOR VEHICLE/TRAIN CRASHES

Contributing Factor	Number	Percent
Driver Inattention	49	26.1
Disregard for Traffic Control Device	40	21.3
Failure to Yield	39	20.7
Vision Obscured	12	6.4
Physical Impairment	9	4.8
Driver Inexperience	7	3.7
Other	7	3.7
Skidding	6	3.2
Weather	6	3.2
Improper Parking	4	2.1
Illegal/Unsafe Speed	2	1.1
Defective Brakes	2	1.1
Following Too Closely	2	1.1
Improper Lane Use	1	0.5
Road Defect	1	0.5
Unsafe Backing	1	0.5
Total	188	100.0%

TABLE 9.06

1985 MOTOR VEHICLE/TRAIN CRASHES BY TRAFFIC CONTROL DEVICE PRESENT

Traffic Control Device	Number	Percent
RR Other (Standard Crossing Sign)	42	31.3
RR Flashing Lights	34	25.4
RR Crossing Stop Sign	21	15.7
None	10	7.5
Stop Sign - All Approaches	8	6.0
Other Stop Sign	7	5.2
RR Crossing Gate	7	5.2
Unknown	2	1.6
Flagman, Officer or School Patrol	1	0.7
Other	1	0.7
Traffic Signal	1	0.7
Total	134	100.0%

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CORRECTIONS TO 1985 Minnesota Motor Vehicle Crash Facts:

1. P. 7, 1984 Crash Rate per Hundred Million Vehicle Miles Traveled should be 315; 1982 Crash Rate per Hundred Million Vehicle Miles Traveled should be 304.

2. P. 21, 1985 Gross Wt. Truck Registrations should be 54,964.

3. P. 25, Hennepin County, All Crashes for 1985, should be 34,135. Anoka County. All Crashes for 1985, should be 4,960.

4. P. 26, Rock County Property Damage Crashes for 1985 should be 148.

5. P. 32, Thanksgiving Holiday, Personal Injuries, should be 705.

6. P. 42, Table 2.11, "16-20" row and "Total" row should be as shown below.

TABLE 2.11

1985 DRIVER FATALITIES' LEVEL OF ALCOHOL CONCENTRATION BY AGE

Age	Killed	Tested	Drinking (.01 or more)	Drunk (.10 or more)	Blood Alcohol Concentration .01-.04	.05-.09	.10-.14	.15-.24	.25 & Over
15 & Below	8	5	0	0					
16	4	3	1	0		1			
17	11	9	5	2	1	2	1	1	
18	11	9	8	4	1	3	1	2	1
19	26	24	15	10	4	1	2	7	1
20	12	10	8	7		1		7	
16 - 20	64	55	37 (67%)	23 (42%)	6	8	4	17	2
21 - 25	71	58	36 (62%)	31 (53%)	2	3	13	14	4
26 - 30	52	42	26 (62%)	23 (55%)		3	3	11	9
31 - 35	22	14	8 (57%)	6 (43%)	1	1	1	3	2
36 - 40	21	19	11 (58%)	9 (47%)	1	1	1	4	4
41 - 45	19	13	6 (46%)	6 (46%)				5	1
46 - 50	24	20	5 (25%)	3 (15%)	1	1		3	
51 - 55	17	13	3 (23%)	2 (15%)	1			1	1
56 - 60	12	8	2 (25%)	2 (25%)				2	
61 - 65	18	17	3 (18%)	2 (12%)	1		1	1	
66 & Above	43	30	2 (7%)	1 (3%)	1			1	0
Unknown	1	1	0	0					
Total	372	295	139 (47%)	108 (37%)	14	17	23	62	23

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